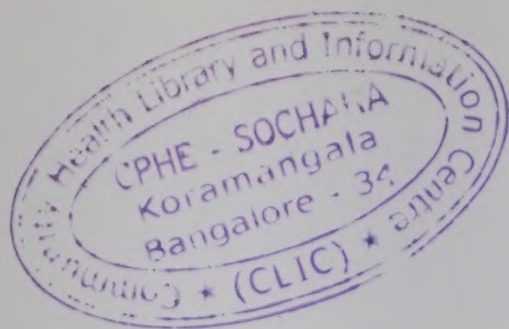


Integrating Gender in Medical Education: Assessing Impact

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Integrating Gender in Medical Education: Assessing Impact



Centre for Enquiry into Health
and Allied Themes (CEHAT),
Mumbai



Maharashtra
University of
Health Sciences



Directorate of Medical
Education and Research,
Government of Maharashtra

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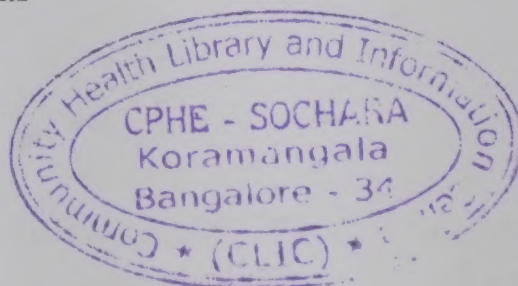
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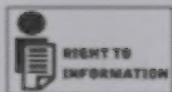


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Contents

Preface	v
Acknowledgements	vi
List of Tables	viii
List of Graphs	ix
Executive Summary	x
List of Abbreviations	xiii
1. Introduction	1
1.1 Gender Gaps in Medical Education	2
1.2 Efforts to reorient Medical Education	4
1.3 Efforts in India to Integrate Gender Concerns	6
2. Integrating Gender in Medical Education in Maharashtra	8
2.1 Fostering Partnership and Identifying Opportunity for Integrating Gender in Medical Curriculum	9
2.2 Understanding Gender Perspectives of Medical Teachers and Gender Review of Medical Textbooks	10
2.3 Selection and Capacity Building of Core Group of Medical Educators on Gender Analysis of Health Issues	11
2.4 Identifying Gender Gaps in the Undergraduate Curriculum and developing Gender Content	13
3. Methodology for Integrating Gender into the Medical Curriculum	14
3.1 Evolving a Gender-integrated Curriculum	14
3.2 Preparatory Phase for Medical Educators to Participate in Research	15
3.3 Content of the Gender Integrated Intervention Modules	15

4. Research Methodology	24
4.1 Research Design	24
4.2 Sampling	24
4.3 Objectives	25
4.4 Data Collection Tool	26
4.5 Pilot Testing	28
5. Profile of Participating Medical Colleges	30
5.1 Medical Colleges Implementing Action Research	30
5.2 Profile of MBBS Students	31
5.3 Student Strength at Intervention Sites	33
6. Results	34
6.1 Gender Differences	34
6.2 Results Based on Key Themes related to GME	37
6.3 Examples of Statistically Significant Statements	46
7. Teaching Gender Integrated Modules- Insights of Medical Educators	53
8. Discussion and Conclusion	57
References	61
Annexure 1	67
Annexure 2	74



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Preface

Integration of "Gender in Medical Education" (GME) is a unique initiative of the Department of Medical Education (DMER), Maharashtra University of Health Science (MUHS) and Centre for Enquiry into Health and Allied Themes (CEHAT) supported by UNFPA.

A significant move towards addressing the complex issue of health inequities has been undertaken by seven medical colleges in Maharashtra as a part of the GME project. This project was successful in engendering medical education by creating a pool of gender-sensitive medical educators who in turn facilitated gender perspectives to MBBS students in their respective medical colleges.

An important contribution of this project has been generation of evidence through a research study in three of the seven medical colleges of Maharashtra. Trained faculty collaborated with CEHAT to design "Gender Integrated Modules" for the undergraduate medical curriculum for 5 disciplines namely-Obstetrics and Gynecology, Community Medicine, Internal Medicine, Forensic Medicine and Toxicology and Psychiatry.

This report presents the study findings of implementation of these modules. It shows a positive change in the overall gender attitude of medical students like a gender informed understanding of communicable and non communicable diseases, gender sensitive approach to the issues of violence against women (VAW) and sexual violence. It also presents experiences of medical educators who used innovative teaching techniques to incorporate "gender concerns" which led to retention of concepts amongst medical students.

National Health Policy (NHP) 2017 has an explicit commitment to address social determinants of health such as gender, poverty, disability and caste to reduce health inequities. I would urge state departments of medical education to use these findings and undertake similar efforts in their respective medical colleges.

Last but not the least I congratulate the medical educators of all the seven medical colleges and CEHAT for having undertaken the task of engendering medical education.

Dr. Pravin H. Shingare
Director Medical Education & Research,
Mumbai

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It is also important to acknowledge the contributions of GME educators from Nagpur, Dhule, Kolhapur, Navi Mumbai medical colleges who participated in the larger project of integrating Gender in medical education across five disciplines namely Community medicine, Forensic medicine and toxicology, Gynaceology and obstetrics, Medicine and Psychiatry. We thank Dr Ashok Jadhao, Dr Bharat Chavan, Dr Rishikesh Wadke, Dr Sarika Patil, Dr Sushmita Bhattacharya, Dr Kapileshwar Chaudhari, Dr Nilesh Tumram, Dr Vishwajeet Pawar, Dr Anuja Thomas, Dr Anil Joshi, Dr Darpan Kaur, Dr Jeevan Pawar and Dr Rajkiran Salunkhe for their participation.

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List of Tables

- Table 1. List of Seven Participating Medical Colleges under the GME Project
- Table 2. Format for the Gender Integrated Medical Topics
- Table 3. Main Concepts included in the Gender Integrated Medical Curriculum
Obstetrics and Gynaecology
- Table 4. Basic Medical Curriculum
- Table 5. Total Number of Students in Three Medical Colleges
- Table 6. Distribution of Respondents - Pre- and Post-test (Based on Site and
Intervention categories)
- Table 7. Gender Attitudes based on attendance

List of Graphs

- Graph 1 : Overall Gender Attitudes of Medical students of Control group and intervention Group
- Graph 2 : Gender Attitudes of Female Students for Control group and Intervention Group
- Graph 3 : Gender Attitudes of Male Students for Control group and Intervention Group
- Graph 4 : Gender Attitudes based on Attendance
- Graph 5 : Attitudes towards Gender roles of men and women
- Graph 6 : Gender sensitivity in addressing health concerns
- Graph 7 : Assessing gender stereotypical attitudes towards patients
- Graph 8 : Attitudes towards women and girls seeking abortion services
- Graph 9 : Attitudes towards delivering reproductive health services to women and men
- Graph 10 : Attitudes towards Sexuality
- Graph 11 : Attitudes towards Gender based violence (GBV)
- Graph 12, 13 : Attitudes towards Access to Abortion Services
- Graph 14 : Recognition of Gender as a social construct
- Graph 15,16, 17 : Developing Gender sensitivity in medical students

Executive Summary

Medicine, as a field, has been critiqued for being gender-biased and not accounting for social determinants that shape health conditions and determine access to healthcare. Gender bias permeates many aspects of medicine in India: clinical practice, research, health program delivery, and medical education.

The World Health Organization (WHO) acknowledged that the need for systematic integration of gender in the curricula of undergraduate medical students in 2007 was imperative. Taking a cue from this, CEHAT collaborated with the Department of Medical Education (DMER) and Maharashtra University of Health Sciences (MUHS) and embarked on a journey to integrate gender perspectives in medical education. DMER deputed middle to senior medical faculty from seven medical colleges to participate in this programme. This was done with the objective of facilitating gender perspectives amongst medical educators, who in turn would integrate these concerns while teaching undergraduate medical students. Five disciplines were shortlisted for integrating gender concerns - Community Medicine, Gynaecology and Obstetrics, Forensic Science and Toxicology, Medicine and Psychiatry. The rationale for their inclusion was that these disciplines were expansive and had maximum scope to integrate gender perspectives. The deputed faculty belonged to these disciplines.

Twenty medical educators from seven medical colleges underwent rigorous training. The training enabled them to identify gender gaps in medical education, gender biases in medical research as well as diagnose how gender insensitivity operates in clinical decision making. Equipped with training and a gender perspective, medical educators along with mentors and the CEHAT team identified gender related gaps in the medical curriculum and designed modules that would facilitate gender perspectives in five disciplines. Examples of gender integration across disciplines include:

1. Understanding differences in terminology such as "gender" and "sex"
2. Recognising gender stereotypes held by Health Care Providers (HCP) and developing Gender Sensitivity in addressing health concerns. Developing gender analysis tools for responding to communicable and non-communicable diseases

3. Developing an in-depth understanding of the concept of sexuality
4. Developing gender sensitive reproductive health services for people from diverse groups (men, women, trans genders, people in same sex relationships)
5. Inculcating gender sensitivity in abortion service delivery for women and girls
6. Being sensitive towards sexual health care needs of diverse groups
7. Recognising and responding to Gender Based Violence (GBV) in a sensitive manner.

While these perspectives were added to the existing medical curriculum, care had to be taken to ensure that inclusion of such a perspective did not increase teaching hours and that the medical faculty were able to complete the teaching in the time stipulated in the MUHS syllabus. Gender content had to be introduced in the existing lectures with evidence on how gender interacts with a particular health condition. Atleast one interactive methodology for class discussion was integrated in the form of case studies, role play, debates and short films. The existing structure of teaching medical topics was applied to the gender content by defining learning objectives, outcomes, role of doctors and knowledge attitudes and skills.

The gender integrated modules were tested through a quasi-experimental research design to assess whether gender integrated teaching can facilitate positive attitudes amongst students towards gender concerns. Although seven medical colleges were engaged in teaching the new content, for the purpose of research, three medical colleges were shortlisted based on availability of faculty and adequate number of MBBS students in the medical college. A validated scale was based on an amalgamation of three existing scales, namely Nijmegen Gender Awareness in Medicine Scale (N-GAMS), Gender Equitable Men (GEM Scale) and Abortion Attitude Scale. The statements comprised gender stereotypes, myths about sexual health of men, women and diverse groups, violence against women, negative perceptions towards abortion sought by women and girls, prevalent notions around menstrual practices, family planning procedures and ethical issues in medical practice.

The sample comprised Sixth Semester students as the "Intervention" group and Eighth Semester students as the "Control" group. Testing of gender integrated modules was done in two disciplines namely, Community Medicine and Gynaecology and Obstetrics. A total of seventeen gender integrated lectures were taught over six months, nine in

Obstetrics and Gynaecology and eight in Community Medicine. In addition, there were two foundational lectures, one on understanding gender and sex, and the second on understanding violence against women as a health issue.

Findings from the study indicated a consistent positive shift in the attitudes of medical students in the intervention category across different themes. Some themes indicated a statistically significant shift in the intervention category. These themes pertained to recognition of the role of gender in health, awareness of challenges faced by women in seeking abortion services, recognising reproductive and sexual health needs of diverse groups and understanding the health impact of gender-based violence. Other themes pertaining to sexuality and gender stereotypes held about patients indicated some shift but not a statistically significant one. The gender stereotypes that prevail amongst medical students could be due complete absence of discussion on 'sexuality' in the medical curriculum of MBBS; despite its critical role in treating sexually transmitted infections, infertility and advising contraceptive methods. The curriculum is silent on the issue of diverse people such as homosexual, transgender and intersex persons. There is thus a need to deepen the understanding on sexuality across the entire medical curriculum.

An important learning was the need to integrate gender concerns across relevant medical topics throughout the MBBS course. The results of the study showed a strong association between the number of lectures attended by students and its impact on gender attitudes. Even low attendance ensured that some knowledge on gender was retained. This reiterates the fact that gender as a social determinant cannot be relegated to stand-alone lectures or a stand-alone elective course, rather they need to be mainstreamed in to medical curriculum to enhance the understanding of gender concerns within medical/health issues.

To conclude, gender can be integrated into medical teaching by training medical faculty and providing them with relevant material in the form of modules, presentations and evidence. The study results are encouraging, as they indicate The feasibility of integration within the time and resource constraints of medical colleges. The recent National Health Policy commits to gender mainstreaming in health programmes and medical education. In order to ensure good quality of care, there is a need to earmark funds towards different activities on mainstreaming gender into the medical curriculum.

List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
APOG	Association of Professors of Gynaecology and Obstetrics
BPMT	Bachelor of Paramedical Technology
CBSE	Central Board of Secondary Education
CEHAT	Centre for Enquiry into Health and Allied Themes
CET	Common Entrance Test
CLA	Criminal Law Amendment
DiD	Difference in Difference
DMER	Directorate of Medical Education and Research
FMT	Forensic Medicine and Toxicology
GBV	Gender Based Violence
GEMS	Gender Equitable Men Scale
GI	Gastrointestinal+
GMC	Government Medical College
GME	Gender in Medical Education
GoI	Government of India
GRIP	Gender Role Ideology Patients
HCP	Health Care Provider
HIV	Human Immuno Deficiency Virus
ICMR	Indian Council of Medical Research
IPD	Inpatient Department
IPV	Intimate Partner Violence
LGBTQI	Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, and Intersex.
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCI	Medical Council of India
MHUS	Maharashtra University of Health Sciences
MICU	Medical Intensive Care Unit
MTP	Medical Termination of Pregnancy
MUHS	Maharashtra University of Health Sciences

NEET	National Eligibility cum Entrance Test
N-GAMS	Nijmegen Gender Awareness in Medicine Scale
NICU	Neo-natal Intensive Care Unit
NUHM	National Urban Health Mission
ObG	Obstetrics and Gynaecology
OPD	Outpatient Department
PCPNDT	Pre-Conception and Pre-Natal Diagnostic Techniques Act
PICU	Pediatric Intensive Care Unit
PCSOA	Protection of Children from Sexual Offences Act
PSM	Preventive and Social Medicine
PWDVA	Protection of Women from Domestic Violence Act
RH	Reproductive Health
RMNCH+A	Reproductive, Maternal, Newborn, Child and Adolescent Health
RTI	Reproductive Tract Infection
SICU	Surgical Intensive Care Unit
STI	Sexually Transmitted Infection
TB	Tuberculosis
TOT	Training of Trainers
UG	Undergraduate
UNPF	United Nations Population Fund
VAW	Violence against Women
WHO	World Health Organization

1 Introduction

Women's health advocates challenged the biomedical model of health and illness and identified gender-based inequalities, in particular women's lack of control over their sexuality and reproduction, as a determinant of their poor health. Sexism and gender discrimination in medicine has been noted by women and health activists/researchers many years ago. While there is a growing body of knowledge pointing to why gender is an important determinant of health, in reality, it has been overlooked in the context of medical education and health care practice resulting in inequities. The field of medicine has been critiqued for being "gender blind", which means that gender is not taken into account in any aspect of medicine. Second, the field is "male biased" because the body of knowledge on health, well-being, illness and its causes concentrates only on men and overlooks women. Third, the field of medicine does not take into account the aspect of gender inequity which obstructs access to health services and thus impacts health outcomes. Several studies have thrown light on women's poor access to healthcare and gender-bias against women in treatment and care in health facilities (Sen & Östlin, 2008). Within the household and outside, deeply-entrenched gender inequities often take the shape of Intimate Partner Violence (IPV) and sexual violence. Violence against women is a crucial variable to be factored into the intersection of gender and health and made a crucial component of the body of knowledge imparted to healthcare providers.

Gender bias pervades many aspects of medicine in India: clinical practice, research, health programme delivery, and medical education. Even the health programmes and policies lack a gender perspective. Gender hierarchies are understood to create differences between men and women in terms of their 'exposure to risk factors, household level investment in nutrition, care and education, access to and use of health services, experience in healthcare settings and social impacts of ill-health' (WHO, 2006). There is compelling evidence to support how health is experienced differently by men and women owing to 'sex-specific vulnerabilities' and 'gendered vulnerabilities'. For example, differences in XY karyotypes make men vulnerable to prostate and testicular cancer, while in women become vulnerable to cancer of the cervix and ovaries. These are examples of sex specific vulnerabilities. Gendered expectations imposed on men and women in different ways owing to division of labour between sexes also affect health conditions and lead to certain health outcomes.

For example, more men are prone to drowning because of the occupation of being fishermen/boat men, whereas women are more vulnerable to chronic respiratory disorders including chronic obstructive pulmonary diseases given their roles in cooking and fire tending (Snow, 2007).

One of the consequences of gender-blindness in medicine is the limited gender-sensitivity among medical practitioners. For example, medical research often focuses on males and results are extrapolated to females, neglecting their unique physiological makeup. Second, gender analysis is often found to be absent in research. Very few researchers include sex disaggregated statistics. Also, research on diseases more prevalent in women is lacking, for example, rheumatism. These aspects lead to compromised quality of care.

Health care personnel are uniquely placed to address issues related to gender and gender inequalities, sexuality, violence, and many culturally defied norms that increase vulnerability to Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) and affect the health of women adversely in many societies. Initiatives to address gender issues in health have included a number of attempts to build health professionals' capacity to identify and address sex and gender based differences in health care needs.

1. Efforts to reorient medical education

The International Conference on Population and Development (1994) in Cairo and the Fourth World Conference on Women (1995) in Beijing highlighted gender based inequities as crucial determinants of health. These conferences influenced global thinking and led to initiatives addressing gender inequities in health. In 2002, the WHO adopted a gender policy and committed itself to promoting gender equality and gender equity in health. A key to achieving this goal was making gender considerations an integral part of the pre-service health training curricula as this would directly impact health policies and programmes in different countries. This was based on the evidence that despite efforts made through short training courses, and in-service trainings of health providers, many of these efforts could not be sustained. An international consultative meeting of leaders of medical education organised by WHO arrived at a consensus that gender and human rights perspectives should be integrated into all disciplines of medical education and such training should be continued throughout one's professional life commencing with the undergraduate course (WHO 2006). Globally, there have been efforts to integrate gender in the pre-service training of health professionals for at least two decades, in high-income

countries such as the United States of America (USA), Canada, Australia and Germany, and in Low and Middle-Income Countries (LMICs) including the Philippines and Thailand, among others.

This section presents a brief overview of the different efforts made in pre-service medical/nursing training to address women's health concerns as well as social determinants such as social class, race and diversity. Various initiatives across the world can be classified into different types:

- Integrating gender in undergraduate medical curricula (Monash University, Australia and the Chulalongkorn University, Thailand),
- Integrating gender specific topics within medical curriculum (in some cases nursing and midwifery),
- Integrating gender specific topics in sexual and reproductive health in Turkey and steps to address domestic violence against women in Philippines.
- Makerere University in Uganda described an attempt to integrate gender into one module of the undergraduate medical curriculum, namely, the community based learning programme (WHO 2006).
- One of the first initiatives to address gender in medical education was carried out in the USA by Association of Professors of Gynaecology and Obstetrics in 2000 (APOG). The objective of the programme was to optimise women's health care by teaching medical students to recognise gender and sex differences. The curriculum was designed in a manner that equipped medical students to discuss pathophysiology, aetiology, differential diagnosis and treatment for common, serious and women specific conditions, and, efforts were made to build key health competencies in students. These ranged from commonly seen conditions such as osteoporosis in women to gastrointestinal (GI) conditions and understanding specific causal factors for women in autoimmune health conditions. The common thread while teaching each of these conditions was to recognise gender and cultural differences, and the impact of the gender based cultural role on medical conditions. Evaluation of undergraduate medical students was done to assess the level of competencies related to patient care, medical knowledge, interpersonal communication skills and practice based learning.
- Another example is that of Monash University in Australia which in collaboration with Gender and Health curriculum project Canada, has carried out similar efforts to

integrate gender in medical curriculum. The Canadian endeavour had a mixed team comprising medical educators and students and focused on developing different tools for in-service training as well as creating resources that were widely available to medical students for testing their competencies and skills. Such collaboration resulted in creating a repository of materials for medical educators, students and those interested in the area of gender and health. The course material was designed such that it could be taught as a stand-alone set of modules as well as gender integrated medical teaching for students.

- Another pioneering effort was made by seven professors from European universities from Germany, Italy, Sweden, the Netherlands, Austria and Hungary. They designed a curriculum to sensitise medical professionals, their organisations, representatives of pharmaceutical companies and insurance companies on the importance of gender as a social determinant of health. They continue to offer stand-alone courses for medical students, educators and policy makers on gender and health.
- Efforts in South East Asia date back to 2002. Philippines was one of the first countries to integrate domestic and family violence concerns in the medical and nursing curricula. Disciplines of Community Medicine, Psychiatry, Medicine, Paediatrics, Surgery, Gynaecology and Legal Medicine were called upon to integrate these concerns into their respective courses. At the end of the course, the medical students were expected to have developed into culturally-sensitive, gender-sensitive and compassionate doctors and nurses with effective communication and counselling skills. Specifically, the curricula spoke of understanding the root cause of violence, identification of 'at risk' families, carrying out primary interventions and developing competencies in facilitating a reintegration process for survivors of violence. By 2003-04, Thailand decided to initiate gender integrated medical teaching for undergraduate medical students into the six-year MBBS curriculum. The medical curriculum of Thailand now has topics such as ethnicity, sexual orientation, sexuality and recognising the health consequences of sexual abuse.

1.2 Gender Gaps in Medical Education

Over the last few decades, systematic critiques of medicine and public health curricula in India have highlighted many lapses related to the inclusion of social determinants of health in medical education (Qadeer & Nayar, 2005). A systematic review of commonly used Indian medical textbooks revealed that the content of these textbooks was at best gender

blind and at worst, gender biased (Gaitonde, 2005; Khanna, 2005; Prakash, 2005; Iyengar, 2005; Bhate & Acharya, 2005; Patel, 2005; Agnes, 2005). Social differences and biases stemming from signifiers such as gender, caste and class were inadequately explored in community medicine textbooks (Gaitonde, 2005). Women's health was often problematically conflated with demography and population control issues in certain textbooks (Bhate & Acharya, 2005). The textbooks on Obstetrics and Gynaecology were silent on the role of gender hierarchies and power relations in the reproductive health of women (Iyengar, 2005). The link between social realities and effects on mental health concerns were absent in textbooks on psychiatry (Davar, 2005; Patel, 2005). Gender biases were identified in the sections on sexual offences, wife murder and bride burning in forensic medical textbooks by reviewers (Agnes, 2005). In fact, a similar review undertaken a decade later indicated that the same biases continued in the undergraduate textbooks of Obgyn, Preventive and Social Medicine (PSM) and Forensic Medicine and Toxicology (FMT) textbooks (<http://www.gme-cehat.org>). A recent study related to perceptions of medical educators about gender in medical education brought out that gender is understood as a demographic category and for those who recognised it, stated that gender as a social determinant of health was best placed in the community medicine discipline (CEHAT, 2015).

Analytical reviews of medical and nursing curricula point to the gaps in the curricula that do not equip health professionals to respond adequately to women and children facing violence. Although health providers are the first point of contact for victims of violence against women and can help women through their sensitive response, they seem to be reluctant to acknowledge intimate partner violence as a health issue (Bhate-Deosthali, 2013). Several biases such as 'physicians should not interfere with couple's conflicts', 'asking about IPV risks is offending patients', 'some patient's personalities cause them to be abused' (Sprague, 2013) were found to be prevalent amongst medical students.

A study among medical interns in Maharashtra found that almost 25 percent of nearly 2000 students considered abortion to be morally wrong (Sjöström et al. 2014). Two-thirds of 75 undergraduate medical students in Pondicherry believed that spousal consent was essential for the provision of abortion services to women (Hogmark et al. 2013). Medical interns and medical educators often show judgemental attitudes towards women seeking abortion (Sjöström et al. 2014). They find it unacceptable if single women want abortion services and seek spousal consent for providing abortions. Male nursing and medical students had more victim blaming attitudes towards women reporting abuse than their female counterparts.

There is a growing body of knowledge pointing to why gender is an important determinant of health, yet in reality it has been overlooked in the context of medical education and health care practice. The field of medicine has been critiqued for being "gender blind", which means that gender is not taken into account in any aspect of medicine. Second, the field has been characterized to be "male biased" because the body of knowledge on health, well-being, illness and its causes concentrates only on men and overlooks women. Third, the field of medicine does not take into account the aspect of gender inequity, which obstructs access to health services and thus impacts health outcomes. Several studies have thrown light on lower access to health care among women and gender-bias against women in treatment and care in health facilities (Sen & Östlin 2008). Within the household and outside, deeply-entrenched gender inequities often take the shape of intimate partner violence (IPV) and sexual violence. Violence against women is a crucial variable to be factored into the intersection of gender and health and made a crucial component of the body of knowledge imparted to health care providers.

1.3 Efforts in India to Integrate Gender Concerns

In India, an initiative to integrate gender into medical education was initiated by Achutha Menon Centre for Health Sciences of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum in 2002. CEHAT was also one of the partners in this initiative. The three-year project undertook different activities such as formulation of training modules for gender sensitisation, developing criteria for a gender sensitive setting for imparting medical education, organising gender sensitive training of medical college teachers and review of Indian medical textbooks. The project led to a pool of trained medical educators who carried out short training sessions and orientation in their respective disciplines in medical colleges. CEHAT has also led several efforts to address in-service training of medical professionals to respond to the issue of violence against women and has demonstrated evidence based health systems models for responding to DV and sexual violence. In 2014, the National Urban Health Mission (NUHM) replicated this model in eleven more hospitals in Mumbai. Other states have also adopted the model of Dilaasa. This experience of working with the health system on gender based violence was crucial for embarking on this mission.

Building on these efforts, CEHAT (Centre for Enquiry into Health and Allied Theme) with the support of United Nations Population Fund (UNFP) in collaboration with the Directorate of Medical Education and Research (DMER) and Maharashtra University of Health Sciences (MUHS) undertook a project on integrating gender in medical education

into the MBBS curriculum in Maharashtra. The project was conceptualised differently so as to integrate gender in medical teaching by building capacities of medical educators. To start with, a workshop with key stakeholders such as DMER, MUHS and other experts was organised to seek their input. It was agreed that gender integration into medical education should be a joint initiative of CEHAT and DMER, that medical educators be trained, and the modules be tested in select medical colleges to show the impact on change in attitude. The components of the project are described in the next chapter.

2 | Integrating Gender in Medical Education in Maharashtra: The Process

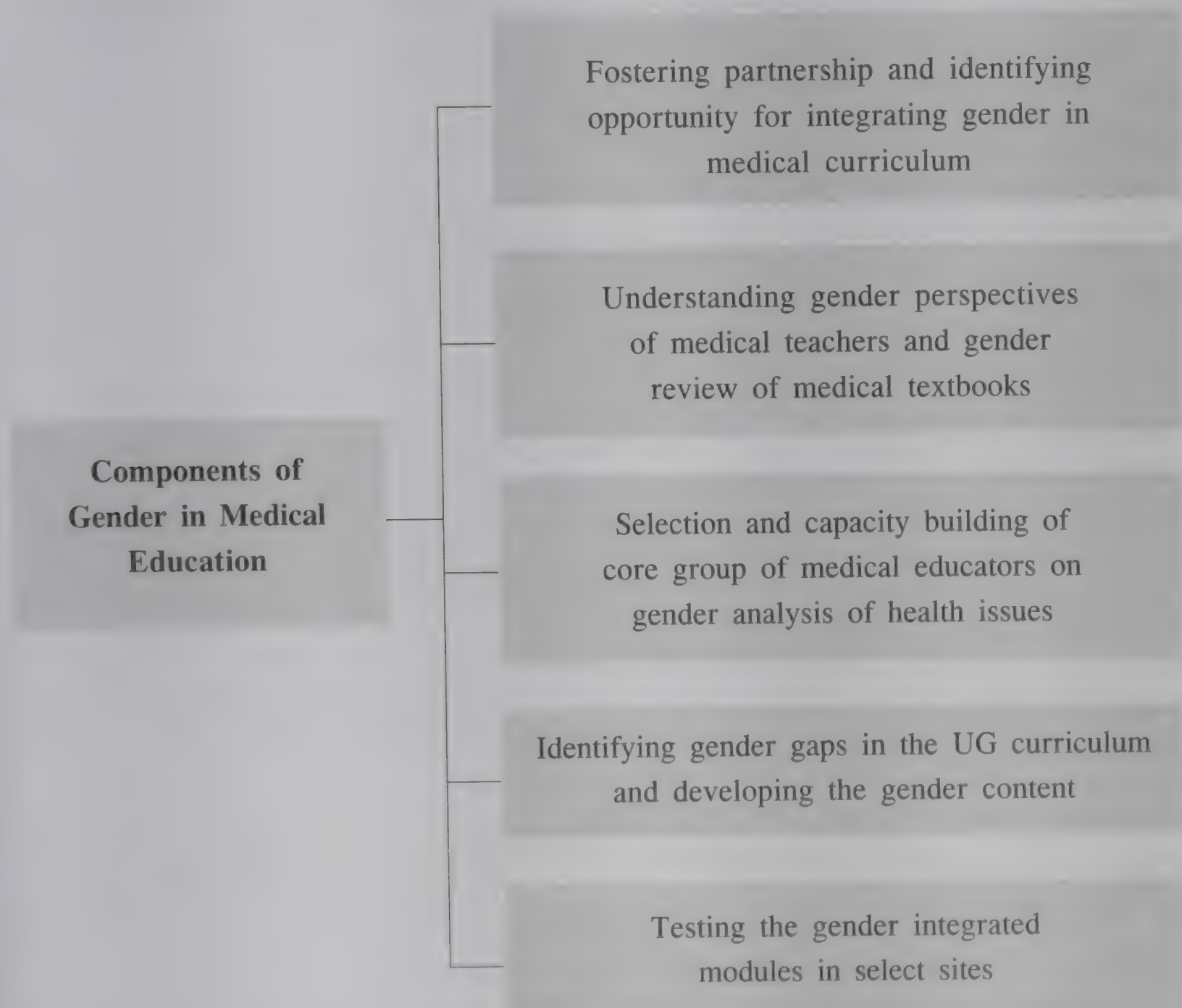
Integrating Gender in Medical Education project (GME) was undertaken in select medical colleges in Maharashtra. The aim was to sensitise the medical faculty and medical students to gender equity in health, which would subsequently lead to gender informed health services. The focus was to achieve gender sensitisation and awareness on public health issues such as gender/sex differences, sex selection, access to abortion and violence against women (VAW) by integrating gender perspectives in the MBBS (Bachelor of Medicine, Bachelor of Surgery) curriculum.

The main objectives of the project were to

1. Build capacity of the medical faculty on gender perspectives and women's health issues through a training of trainers (ToT) programme.
2. Facilitate teaching of gender perspectives to MBBS students who had undergone gender sensitisation training and carry out an assessment of feasibility of teaching gender integrated modules through a research study.
3. Advocate for inclusion of modules integrating gender perspectives in MBBS curriculum by assessing the impact of this programme.

At the conceptualisation stage, a consultation workshop to discuss GME was organised in September 2011 with senior officials from the Department of Health and Family Welfare, Directorate of Medical Education and Research (DMER), MUHS, State Women's Commission and the Indian Council for Medical Research (ICMR) along with academics, activists and organisations working on gender and health. In the workshop, several key recommendations regarding the GME project strategies emerged: The development of ToT programme focused on five departments FMT, Medicine, PSM/Community Medicine Obstetrics and Gynaecology (ObGn) and Psychiatry. The focus was on these disciplines because they formed a large part of undergraduate education. An important recommendation was to develop a virtual resource centre that comprised reading materials, presentations, latest evidence and tools for teaching, which could be easily accessed by medical educators.

The first phase of the project focused on capacity building of the medical faculty on gender perspectives and women's health issues through a ToT programme. The second phase was an intervention phase which comprised developing gender-integrated modules to facilitate gender perspectives to MBBS students and a study to assess the feasibility of teaching these modules to students.



2.1 Fostering Partnership and Identifying Opportunity for Integrating Gender into the Medical Curriculum

Building on past efforts in India and abroad, CEHAT embarked on the 'Gender and Medical Education (GME)' project that aimed to integrate gender in the undergraduate medical curriculum. The first component of our strategy was to win the support of the concerned authorities in the state of Maharashtra. We used the gender review of medical textbooks

published in 2005, to highlight the gender gaps in the undergraduate medical curriculum to the MUHS and DMER. During discussions with DMER and MUHS, we discovered that the MUHS has the mandate to implement curricular changes to integrate gender concerns. The team, therefore, decided to implement GME as a joint project of CEHAT and DMER. We also agreed that medical educators from select medical colleges in the state, trained by us on gender issues in health, will play a key role and be centrally involved in the rolling out of the project. This would ensure that there was ownership from medical educators for the revised curriculum and besides, we would be able to test the revised curriculum in the medical colleges, to ascertain the feasibility of implementing it.

To ensure that the integration of gender into the curriculum could be done without increasing the teaching load significantly, we had to decide on core disciplines and the themes to include. A series of meetings and discussions led to identifying five disciplines taught in MBBS as the subjects in which we would integrate gender concerns. These were: Gynaecology and Obstetrics, Forensic Science and Toxicology, Community Medicine, Internal Medicine, and Psychiatry. We chose these disciplines because they are considered to be core disciplines of the undergraduate (UG) medical curriculum. These disciplines also offered significant scope for integrating gender perspectives in teaching UG students. Regarding themes through which we would introduce gender, we zeroed-in on public health concerns such as access to abortion, challenges in ensuring access to safe abortion while also preventing sex selection, and impact of violence on women's health. These themes were found to be conspicuously absent in the existing undergraduate medical curriculum.

Seven rural medical colleges were identified to participate in the project, and medical educators from the five selected disciplines were to be trained in gender issues in health. We envisaged that champions for gender-integration would emerge from among this group.

2.2 Understanding Gender Perspectives of Medical Teachers and Gender Review of Medical Textbooks

A situational analysis was undertaken to understand how medical educators perceive the issue of gender in medical education and to elicit their opinions, suggestions, challenges and apprehensions for integrating gender in medical education and practice. As part of this study, 60 medical professors and 24 other staff were interviewed. The findings of this study indicated that the medical educators understood gender in varied ways, from a

demographic category, to referring to it as health issues of women, to associating it with increase in violence against women or increased presence of women in the workforce. Very few medical educators referred to gendered social systems and structures. Most of them were of the opinion that gender as a social determinant was irrelevant to the medical curriculum. They also opined that sexual harassment is an outcome of increased women's work participation. The study revealed stereotypes commonly held by educators about women patients such as '*women give vague histories as compared to men who provide clear history*'; '*women report more somatic complaints than men*' and therefore, they alluded to intentional hysterical syndrome amongst women. The study also found that these notions influenced procedures for abortion care, access to contraceptives and non-recognition of health consequences of violence. Doctors readily stated that they do not offer medical termination of pregnancy to married women unless they have the consent of their spouse or family members, though there is no such requirement in the Medical Termination of Pregnancy (MTP) law. They firmly believed that even if it was the woman who carried the pregnancy ahead, the decision should belong to the couple. All second trimester abortions were viewed with suspicion. Doctors believed that women carried out sex selection in some place and came to seek termination of pregnancy at the public hospital. In case doctors provided second trimester abortion, they ensured that women were sterilised after the abortion. With regard to the issue of violence against women, several educators were able to list different health consequences of violence on women but yet ironically all called it a legal issue and not a health issue. They could not see any role that they could play besides providing medical treatment to a survivor of violence (John et al. 2015).

2.3 Selection and Capacity Building of Core Group of Medical Educators on Gender Analysis of Health Issues

As the focus was on five disciplines namely, Forensic Medicine and Toxicology (FMT), Medicine, Preventive and Social Medicine (PSM), Obstetrics and Gynaecology (ObG) and Psychiatry, medical educators of those disciplines formed the ToT group. Six district-level government medical colleges were nominated by the MUHS to participate in the project. A conscious effort was made to ensure geographical representation from across the state, and representation of those that did not have access to training and resources as compared to medical colleges located in Mumbai and Pune. For the purpose of the project, medical educators from seven medical colleges across Maharashtra were identified and trained on how to incorporate gender in their teaching (Table 1).

Table 1. List of Seven Participating Medical Colleges under the GME Project

Sr. No.	Medical Colleges
1	Government Medical College, Nagpur
2	Shri Bhausaheb Hire Government Medical College, Dhule
3	Rajarshi Chhatrapati Shahu Maharaj Government Medical College, Kolhapur
4	Government Medical College, Miraj
5	Government Medical College, Aurangabad
6	Swami Ramanand Teerth Government Medical College, Ambejogai
7	Mahatama Gandhi Mission Medical College, Navi Mumbai

A total of three trainings of trainers were organised. Deputations were sought for middle to senior level medical educators who would have the autonomy to implement changes in teaching practices and were permanent staff members of the medical college. Despite clear eligibility criteria, nearly half of the deputed medical educators were bonded candidates, which meant that they were at the college to complete a bond as part of medical education and would leave in a couple of months. But as they were deputed, they had to participate in the five-day programme in February 2014. Post the first training, efforts were made to depute a fresh set of medical educators as bonded candidates would not continue in the medical college after one year, and therefore would not be able to carry out the activities of this project. Second time deputations for five days were difficult as senior medical educators could not leave the department for that long. So, a two-day programme was held in November 2014. It provided an overview of all the contents taught in the first ToT program - concepts such as gender, sex, intersectionality, understanding the role of gender and rights in a health setting, debating the issues of family planning, abortion services, ethical issues surrounding medical practices and recognising violence against women as a public health issue.

This training was followed by a training in 2015 for the entire group that aimed at understanding how to plan for gender sensitive health care in public hospital settings. As educators had understood the concepts and gaps in gender sensitive services, this training focused on how to address these gaps in the medical curriculum. Medical educators were divided based on disciplines and a mentor expert was assigned to each discipline. Group work involved a detailed review of MBBS curriculum and identifying topics for integration of specific social determinants. An important output of the training was a list of topics in

each of the five disciplines that needed gender integrated materials and a set of tools to teach new content.

2.4 Identifying Gender Gaps in UG Curriculum and developing Gender Content

An in-depth review of the curriculum for the five disciplines was undertaken with experts from the field of gender, public health and ethics. The review identified specific gaps. Topics such as physiology of menstruation, urinary disorders, genital fistulae, genital prolapse, infections of genital tract, sexually transmitted infections, medical termination of pregnancy amongst others did not find any reference to social determinants in the Gynaecology and Obstetrics MBBS curriculum. Gender aspects were conspicuously absent in topics such as Definition and Spectrum of Health, Urban-Rural Health, Demography, Family Welfare and Population and Medical Ethics amongst others in the Community Medicine curriculum. Forensic Science and Toxicology curriculum had still not integrated Government of India (GoI) medico legal care guidelines while teaching sexual violence as a topic. Topics such as sex verification, personhood determination, medico legal aspects of marriage are taught without any reference to the debates (medical and legal) surrounding their practice, including the health consequences that arise because of gender blind and/or gender biased medical practice. Gender and its link to communicable diseases and non-communicable diseases, association of gender and endocrine disorders and gender and coronary heart ailments were found missing in the medicine curriculum. Medical educators strongly advocated for gender content to inform each of these topics and based on identification of gaps, specific themes for gender-integrated teaching were developed.

1. Understanding differences in gender and sex and recognising the role of gender in health
2. Developing gender analytical tools for understanding various diseases
3. Recognising gender stereotypes held by Health Care Providers (HCP) and developing gender sensitivity in addressing health concerns
4. Developing an in-depth understanding of the concept of sexuality
5. Developing gender sensitive reproductive health services for people from diverse groups (men, women, trans genders, people in same sex relationships)
6. Inculcating gender sensitivity in abortion service delivery for women and girls
7. Being sensitive towards sexual health care needs of different groups
8. Recognising and responding to Gender based violence (GBV) in a sensitive manner.

3 | Methodology for Integrating Gender into the Medical Curriculum

Gender was introduced in medical topics within the framework of the existing medical curriculum such that it fit within the time frame allocated to existing lectures.

3.1 Evolving a gender-integrated curriculum

Medical educators trained in the GME programme suggested a specific format that would assist them in conducting the lectures. Each lecture was developed with the following sections:

- Key points at the beginning of the lecture to present why gender needs to be integrated in the lecture.
- Learning outcomes were classified as 'Knowledge', 'Attitude' and 'Skill'. The knowledge aspect aimed at creating a holistic understanding on how gender is associated with a particular health condition, the skill component aimed at enabling students to apply the knowledge in their clinical practice, while the attitude component was focused on recognising the importance of an 'unbiased' and 'gender sensitive' approach in responding to patients.
- A subsection titled 'content' was designed at providing evidence on how gender interacts with health. It consisted of global and national evidence.
- At least one activity was introduced in each lecture - either a case study, group discussion, film, role play or debate to discuss the gender aspect in class.
- The topic ended with 'role of doctor/medical student' enabling him/her to recognise what exactly is needed to be done to deliver gender informed health services.

Table 2 Format for the Gender Integrated Medical Topic

Note to the Educator:

Key Gender Related Aspects to be Covered:

Knowledge	Attitude	Skill

Content of the Gender Integrated Component:

Role of Doctors:

3.2 Preparatory Phase for Medical Educators to Participate in Research in Interventions

The hypothesis, '*gender integrated curriculum for UG students can lead to positive attitudes*' had to be tested, for which an intervention study was planned (details of methodology of the study are mentioned in Chapter 4). This section focuses on preparation of gender content for medical topics that were to be a part of the study.

As this was the first time medical educators had to deliver gender-integrated lectures, there was considerable preparation, which included developing slides on the available evidence, providing examples and other explanations for classroom teaching. These were developed by the CEHAT team in consultation with the GME educators. Significant time was spent in familiarizing medical educators with participatory methods in teaching, such as group discussions, case study facilitation, film screening and role-play. We also carried out an exercise to preempt questions that may be asked by medical students, issues that may emerge from the discussion and key messages to be given at the end of the activity in the form of a key. Educators also developed fact sheets for gender content related to specific lectures so that these could be distributed to students to ensure retention of the content.

3.3 Content of the Gender Integrated Intervention Module

Gynaecology and Obstetrics and Community Medicine were selected as the subjects for the intervention study and Semester 6 was decided as the one in which medical students

would receive the gender integrated medical curriculum. Out of a total of 11 community medicine topics for Semester 6, eight lectures were shortlisted for gender integration. For gynecology, all the nine topics were included for gender integration. Besides integrated lectures, a need was felt to create two foundation lectures namely 'Gender and Sex in Health' and 'Violence against Women (VAW) as a Health Issue'. Two such lectures were to be introduced in Community Medicine and Gynaecology and Obstetrics for Semester 6.

Gender and Sex: The objective of the lecture was to enable students to distinguish between genetic sex and gender and recognise how gender is socially constructed. The lecture was also expected to familiarise students with the concept of intersectionality and how class, caste, religion and other social determinants interplay with health condition.

The expected outcome of the lecture was to develop a better understanding of gender as a social construct, communicate that gender is not a binary and help students recognise gender norms and roles and how they lead to discrimination, lack of access to resources and affect health seeking behaviour.

Educators decided to familiarise students with the social construction of gender through a story about the life journey of twins (a boy and a girl) from their birth to their adult lives. The aim was to get students to build the story by listing gender norms and gender roles expected from the male and female twins. Another method shortlisted by educators was the use of myths and facts to discuss statements related to gender and sex. For example, "*Women have long hair and men have short hair, is this a product of biological sex or gender?*" would help students to open up and also reflect on the concept of gender. An important component of the lecture was to focus on gender biases that exist amongst medical professionals. Notions such as "*Women have a low pain threshold, are more demanding of health providers and visit health facilities far more than men*", were to be discussed with medical students. These myths would be countered with evidence on how women are often the last to access healthcare and reach the health system even in aggravated health conditions.

Violence against Women: There was no mention of this issue in the MBBS curriculum. The objective of this lecture was to enable students to recognise violence against women as a public health issue, identify health consequences of violence and facilitate care for survivors of violence. Specifically, the lecture was envisaged to focus on developing perspective and skills for responding to women/children facing violence.

Medical educators decided to use a mix of different methods in this lecture. The lecture would have a mix of case studies, situations for identifying forms and consequences of violence, myths and facts related to sexual violence/rape and role play to demonstrate skills in responding to women/children.

Students would be oriented to global and national statistics on VAW and health consequences. Value clarification on why violence occurs would be carried out with students as this would help educators to understand gaps in perspective. Specifically, for sexual violence, educators decided to use statements related to myths, for example, *"Status of hymen can provide information on whether sexual violence occurred or not"*. Clarity would be provided to students about how such examinations are unscientific, illegal and also damaging to the character of a woman/child. While doing so, students would be familiarised with laws pertaining to sexual violence to recognise different forms of sexual violence. Educators decided to integrate skill building exercises on communication skills for seeking informed consent, taking history, conducting examination and providing psychological first aid to the woman/child who has undergone sexual violence. Another important dimension, pregnant women facing domestic violence was to be included in the foundation lecture. Students would be oriented to use a screening tool for domestic violence identification and response. The tool would also be used in practice sessions.

Table 3 provides a snapshot of intervention modules along with gender content and methodology for Community medicine and Gynaecology and obstetrics disciplines.

Name of lecture	Gender Topic	Content	Method
Physiology of Menstruation	Taboos about menstruation, Secretive menstrual practices and health consequences, Management of menstruation in adolescent girls	<ul style="list-style-type: none"> • Presents lack of accurate and reliable information for girls about menstruation. • Discusses nature of discrimination faced by adolescent girls that leads to secretive menstrual practices. • Presents links between discrimination faced by girls and health consequences such as anaemia and RTI. • Raises ethical concerns about hysterectomies of intellectually challenged adolescent girls for 	<p>Use of a case study to present a situation of adolescent girl reporting with anaemia.</p> <p>Guided discussion on poor nutrition in girls leading to anaemia, followed by posing questions on menstruation and practices by the girl in the case study and providing</p>

Name of lecture	Gender Topic	Content	Method
		<p>managing menstruation and its health effects on girls.</p> <ul style="list-style-type: none"> • Discusses alternative mechanisms needed to train intellectually disabled girls and women to take care of themselves during menstruation. 	accurate information on menstruation, cycle, normal blood flow and hygiene.
Menstrual Disorders	Sexual abuse as one of the reasons for amenorrhea	<ul style="list-style-type: none"> • Recognising sexual abuse of adolescents as a possible indicator of amenorrhea resulting in pregnancy. • Provides steps in communicating with the adolescents in a non judgmental manner, creating safe space for disclosure of sexual abuse, explaining relevance of medical examination and treatment. 	Use of a case study related to sexual abuse and amenorrhea to initiate a discussion on the importance of history seeking in a sensitive manner.
Menstrual disorders	Over use of hysterectomies to deal with menstrual disorders	<ul style="list-style-type: none"> • Challenging hysterectomies as the only solution to deal with menstrual problems in women. • Recognising side effects of hysterectomies on women and addressing menstrual problems through other treatment protocol. • Questioning the uncritical use of hysterectomies and critiquing the incentivisation of hysterectomies through government sponsored schemes. 	<p>Role Play</p> <p>Use of a case study to illustrate side effects of hysterectomy on a woman and guided discussion.</p>
Infections of genital tract	Concept of sexuality, Sexual violence as a cause of STI and RTI	<ul style="list-style-type: none"> • Offering clarity on terms such as 'sexuality', 'sexual health', and 'sexual and reproductive health rights'. • Debunking common gender based notions about men having more 'sex drive' than 	Presentation of case scenarios related to RTIs and STIs to facilitate communication skills in medical students to seek

Name of lecture	Gender Topic	Content	Method
		<p>women and addressing stereotypes related to gendered roles of men and women in society.</p> <ul style="list-style-type: none"> • Addressing health concerns of transsexual and intersex persons and response of health systems. • Addressing sexual violence against women/girls resulting in STI and RTI as a health consequence. 	<p>history and provide contraception alternatives and treatment.</p>
Other gynecological disorders: Adenomyosis, Endometriosis	Sexual and reproductive health needs of women suffering from Adenomyosis Infertility issues of women suffering Endometriosis	<ul style="list-style-type: none"> • Addressing concerns related to hysterectomy as a medical solution to women suffering from Adenomyosis. • Discussing health concerns of women in menopause and recognising health needs. • Recognising health needs of women with endometriosis in the context of infertility and its consequence in the form of stigma and desertion. 	<p>Presentation of a case study to illustrate women suffering from disorders and steps in devising treatment plans suited to their conditions.</p>
Genital Prolapse, Genital tract displacement	Gender discrimination and poverty as factors related to prolapse of uterus.	<ul style="list-style-type: none"> • Recognising socioeconomic factors and gender roles leading to prolapse of uterus. • Addressing overburden of physical labour, inadequate rest post-delivery, lack of control over sexual relationships as causes of prolapse amongst others. 	<p>Use of a case study to illustrate poverty, physical labour and sexual violence in marriage resulting in a prolapse condition. The case study also highlights insensitive health providers' response that further isolates the woman suffering from prolapse. Guided discussion by medical educator on the case study.</p>

Name of lecture	Gender Topic	Content	Method
Urinary disorders of gynecology - Perineal tears Recto Vaginal fistulae RVF and Vesico Vaginal Fistulae VVF	Obstetric violence and health consequences	<ul style="list-style-type: none"> ● Recognising different forms of Violence against women in labour as obstetric violence. ● Understanding that genital fistulae and perineal tears are also a consequence of mismanaged labour and the indiscriminate use of episiotomy. ● Presenting laws developed to address obstetric violence in western countries. ● Stressing upon respectful maternity care as a universal human right. 	Additional slides while teaching main topic.
Contraception- Temporary and Permanent methods	Contraception as a 'gendered issue'. Role of informed consent in contraception decision making	<ul style="list-style-type: none"> ● Recognising that Contraception is misunderstood as women's responsibility. ● Identifying women's concerns with regard to permanent contraceptive methods. ● Understanding ethical responsibility of doctors vis a vis contraception alternatives. ● Involving men in contraception decision-making and debunking myths about vasectomy. 	A real time case study of Bilaspur mass sterilization camp. Guided discussion on the role of doctors in it and health consequences suffered by women.
MTP Act and procedures of MTP in first and second trimesters	MTP and women's right to choose continuation or cessation of pregnancy. Understanding the difference between MTP & PCPNDT Act. Developing post abortion contraception.	<ul style="list-style-type: none"> ● Discussing biases about single women seeking abortion services ● Recognising factors that lead to a delay in seeking abortion services ● Presenting concerns related to coercive contraception practices post provision of abortion by health professionals. 	A case study presenting a fourth time pregnant economically underprivileged woman seeking abortion services. Guided discussion on reasons for delay in reaching the health centre.

Name of lecture	Gender Topic	Content	Method
Reproductive, Maternal, New born child and adolescent health (RMNCH+A)	Concept of life cycle approach to deal with health concerns of women at different stages of their lives.	<ul style="list-style-type: none"> ● Recognising the effect of gender norms and gender roles played by women and its relationship to their health status right from childhood to ageing. ● Understanding the social context of health conditions such as anaemia, white discharge, pregnancy, contraception, neglect and under nutrition amongst others. 	Case studies based on different life stages of women from birth, child hood, adolescent, adult life and old age. Guided discussion on life cycle approach for responding to health conditions at each of these stages.
Reproductive, Maternal, New born child and adolescent health (RMNCH+A)	Sexual and reproductive health of adolescents	<ul style="list-style-type: none"> ● Recognising sexual and reproductive health concerns of adolescents. ● Addressing myths and notions about sexual relationships existing amongst adolescent boys and girls. ● Acknowledging lack of contraceptive options for adolescents which may lead to unwanted pregnancies. ● Acknowledging sexual behavior amongst them and offering contraceptive choices suited to them. 	An exercise to help medical students discuss terms and acts that come to their mind when they hear the term 'sexuality' Guided discussion on challenges, barriers and discomfort experienced by medical students. Relating their experiences with adolescent patients seeking health care and their fears.
Occupational Health	Occupational health hazards during pregnancy.	<ul style="list-style-type: none"> ● Understanding physical, biological, chemical agents, workhours, work conditions for pregnant women and occupational hazards faced by them. ● Recognising lack of health care and access to health facilities in informal sector for pregnant women 	Use of case study of a pregnant woman working in the textile industry. Guided discussion about health hazards to pregnant women at the work place and types of medical complaints reported at health facilities.

Name of lecture	Gender Topic	Content	Method
Family Welfare and Population Control (This topic is taught in 3 lectures)	Gender discrimination in the family planning programme	<ul style="list-style-type: none"> ● Recognising disproportionate focus on women for family planning. ● Explaining unmet need of contraception amongst women and critiquing limited options in contraception. 	Case based discussion on sterilization camp conducted in Kerala and ethical concerns about quality of care.
Family Welfare and Population Control	Informed decision making in family planning, Importance of counselling in making contraceptive choices.	<ul style="list-style-type: none"> ● Recognising the role of counselling to enable women to make informed decision about contraception. ● Discussing risks and benefits, contraindications and common side effects of different types of contraception. 	Role play by medical students to demonstrate counselling different women about contraception choices.
Family Welfare and Population Control	Access to legal abortion	The content speaks about unsafe abortions as a public health problem, different reasons why women seek abortion are discussed and the key barriers that they face in seeking abortion.	Use of a Case study
Demography, demographic cycle, population trends - world and India	Misconceptions about association of sex ratio and sex selection, Discussion on MTP and PCPNDT Act as non-contradictory laws.	<ul style="list-style-type: none"> ● Discussing factors such as higher mortality in girls than boys under 5 years, limiting size of the family, rapidly falling fertility amongst others as reason for declining sex ratio. ● Presenting implications of denial related to provision of MTP services on women and girls. ● Recognising gender norms and gender roles that keep them away or delay in access to MTP. 	Case study of a woman seeking an abortion at 22 weeks of pregnancy. Guided discussion probing for reasons related to the delay in accessing MTP services.
Comprehensive health care	Gender sensitive health care as a means to provide comprehensive health services.	<ul style="list-style-type: none"> ● Recognising the role of gender in accessing "health" as an indispensable and fundamental right. ● Understanding gender based 	Small group discussion on four elements of right to health care. Guided discussion

Name of lecture	Gender Topic	Content	Method
		<p>vulnerabilities, differential access to health services resulting in different health outcomes.</p> <ul style="list-style-type: none"> • Understanding components required to develop gender sensitive health service delivery such as availability, accessibility, acceptability and quality of services for people suffering from economic hardships and gender based vulnerabilities such as women, transgender, intersex persons and those in same sex relationships. 	<p>on analysing gender based gaps in current health service delivery such as different risks and vulnerabilities to infections, health conditions, different perceptions of health needs etc.</p>

4 Research Methodology

4.1 Research Design

A quasi-experimental design was used to test the hypothesis that integration of gender content in medical lectures for undergraduate medical students will lead to positive attitudes amongst them. For the purpose of the study, a control group and an intervention/experimental group of medical students was necessary. Before embarking on the study, the tasks on hand were determining the number of colleges participating in the research study, determining the semester in which the 'Intervention' had to be carried out and the semester that would be the "control" arm of the research design.

4.2 Sampling: Determining Semester for 'intervention' and 'control' groups of medical students

Semester 6 was decided as the "intervention" after several rounds of discussions with medical educators. Examinations are usually held in Semesters 3, 5, 7 and 9. These semesters could not be considered for the intervention owing to confounding factors of students' preoccupation with exams, issues of absenteeism in classrooms and reduced teaching hours. Additionally, by Semester 6, students were expected to have a better understanding of different disciplines than students in semesters one, two and four. At the same time, Semester 6 students did not have to cope with the pressures faced by final (8) year students. Table 4.1 provides a snapshot of the undergraduate curriculum.

The control group had to be comparable to the experimental group, and so it consisted of students in their 8 semester of MBBS education, that is, students who had recently undergone the MUHS curriculum of Semester 6. The selection of the 8 Semester students as the control group was done from the same college instead of another college to reduce variables such as variation in teachers, teaching methods and other resources.

A review of Semester 6 syllabus revealed that the subjects taught included ObG, PSM and Medicine, which were also the disciplines that were chosen for development of gender integrated medical topics. Adequate number of gender trained medical educators were required in these three disciplines. But there was only one GME trained professor for the

discipline of Medicine. As a result, the subjects finalised for the intervention were ObG and PSM. Medicine was not included due to unavailability of trained professors for the intervention. Finally, the selection of medical colleges was a function of the availability of trained professors in the two subjects, ObG and PSM.

Table 4. Basic Medical Curriculum

Phase	Type	Duration	Subjects
First	Pre-clinical	12 months	Anatomy, Physiology and Biochemistry
Second	Para-clinical	18 months	Pharmacology, Pathology, Microbiology and Forensic Medicine and Toxicology
Third	Clinical	24 months	Ophthalmology, Otorhinolaryngology, Community Medicine, General Medicine, Paediatrics, Surgery, Orthopaedic Surgery, Psychiatry and Obstetrics and Gynaecology
Compulsory Rotating Internship		12 months	
Total duration: 5.5 years			

The intervention modules were taught in Semester 6 in the third phase of the medical course, and the control group for Semester 8 in the same phase.

4.3 Objectives

The objectives of the study were to measure the shift in knowledge, attitude and skill towards

1. Recognising "gender" as a socially constructed concept through awareness of the sex-gender dichotomy, diverse gender identities and the existence of varied gender roles.
2. Recognising the impact of gender as a social determinant of health through differences in the nature of medical conditions, bias in treatment and disparity in accessing resources and healthcare.

3. Recognising health consequences of gender based violence and the importance of an appropriate response to such violence by health providers.
4. Sensitising medical students towards the issue of abortion, the conditional access to safe abortion, access to contraception and sex selection as a manifestation of deep rooted gender inequality.
5. Recognising ethical issues in practice such as importance of informed consent, privacy and confidentiality and the need for a more sensitive doctor-patient interaction.

4.4 Data Collection Tool

The most common method of assessing knowledge, attitudes and skills of medical students and/or medical and nursing practitioners towards gender has been with the use of self-administered scales. Commonly used scales were Gender Equitable Men Scale (GEMS), Nijmegen Gender Awareness in Medicine Scale (N-GMAS) and Abortion scale. Hence for the purpose of this study, the tool decided upon was a self administered scale. A brief review of commonly used scales with students has been presented. The GEMS scale (Pulerwitz, 2008), N-GAMS (Verdonk, 2008) and Abortion (Sloan, 1983) scale are validated scales. These scales were shortlisted because they were closely related to measuring objectives of the study as mentioned earlier.

- **The Nijmegen Gender Awareness in Medicine Scale (N- GAMS)** consists of three subscales, namely, Gender Sensitivity Subscale (for example, *"Addressing differences between men and women creates inequity in health care"*), Gender Stereotypes towards patients (for example, *"Women patients complain about their health because they need more attention than male patients"*) and Gender stereotypes towards doctors (for example, *"Male physicians are more efficient than female physicians"*). The Nijmegen Gender Awareness in Medical Scale has been widely used to assess the gender based understanding of medical students in different European countries, (Verdonk, 2012).
- **The Gender Equitable Men scale (GEMS)**, covered domains related to Violence against women (for example, *"There are times when a woman deserves to be beaten"*), sexual relationships (for instance, *"Men are always ready to have sex"*), reproductive health and diseases prevention (for instance, *"It is a woman's responsibility to avoid*

getting pregnant"), domestic chores and daily life domain (for example, *"Changing diapers, giving a bath and feeding kids is the mother's responsibility"*). GEMS has been used in different settings like school students, with young men and women in urban and rural communities across different states of India like Maharashtra and Jharkhand. Though it has not been used with medical students, it is relevant for them as they belong to the same social milieu and tend to have the same beliefs about gender, gender roles, and gender stereotypes as those in society.

- **The Abortion Attitude Scale** consisted of statements related to understanding attitudes towards the issue of abortions (*"Abortion is a good way of solving the problem of an unwanted pregnancy"*, *"A foetus is not a person until it can live outside"*). Attitude to Abortion Scale was developed in the United States to be used by medical educators in assessing students' attitudes to abortion (Sloan 1983). Also, the exploratory study carried out among the doctors (John et al. 2015) threw light on the misconceptions prevalent among doctors about abortion, particularly the second trimester one, relating it with sex selection, biases against adult single women who approach the health facility for abortion and so on.

Developing a Tool to Assess Student Knowledge and Attitudes

The above-mentioned scales were most relevant as they covered most domains that would be tested to capture gender attitudes amongst medical students. However, a single scale could not capture the range of attitudes that the GME initiative set out to achieve. The GME study wanted to assess an understanding on difference between gender and sex, developing gender sensitivity amongst student's vis-a-vis women facing violence, increasing awareness related to delays in seeking MTP services, recognising gender diversities and health needs of sexual minority communities. The scale had to capture attitudes on all these fronts. The existing scales focused on a different set of issues. For example, N-GAMS scale did not comprise statements to capture attitudes towards violence against women. The GEMS did not comprise of statements to capture attitudes towards abortion. The Abortion Attitude scale did not consist of statements that capture attitudes towards gender roles, gender stereotypes and violence against women.

Hence, a scale was developed that chose statements from all the three scales and also added six new statements. These new statements related directly to the gender content that was incorporated in Semester 6 and so gender attitudes towards those aspects also needed to be captured. This is also an important contribution to the literature as the scale

will be relevant for use with medical students across the country as it covers cross cutting issues/domains pertinent to medical practice.

The Six Statements added to the Existing Scale include

- Consent of woman is not required for carrying out family planning procedures as long as her husband agrees.
- Secrecy around menstrual practices cannot lead to reproductive tract infections.
- Hysterectomy is a reliable solution for all menstrual abnormalities.
- Antenatal care should only look at the status of a woman's pregnancy and her foetus.
- Hysterectomy does not affect women's health in any way.
- Lack of toilets in schools leads to absenteeism among young girls.

4.5 Pilot Testing the Tool

While developing the tool, there was a lot of deliberation on whether to use a five-point or a three-point scale. The concern with the three-point scale was the possibility of having majority of the responses falling in the 'unsure' category. The second aspect was to capture qualitative aspects of gender sensitivity in medical students and hence we considered incorporating vignettes and having students to respond to those. However, we realised that it was not practical due to limited lecture time. Time required for filling up the questionnaire would increase substantially which may be difficult for medical faculty to allocate given the existing structure of lectures and practicals. The other concern was the cumbersome data-set that would be generated through a mix of quantitative and qualitative aspects in the same tool. Hence, the aspect of explaining reasons for responses by respondents was removed.

The tool was pilot tested in one of the medical colleges MGM, Navi Mumbai College which had participated in the Gender in Medical Education project. The pilot test was carried out with 34 students. The objectives of the pilot testing were

- To determine whether the respondents were able to understand all the statements in the scale.
- To assess whether the respondents were more comfortable using a three-point or a five-point scale.

- To assess whether there were any significant variations in the responses obtained from the three-point and the five-point scale.

The respondents were given an information sheet outlining the nature of the project and their role as participants in the assessment study. Due consent of each respondent was taken for administering the questionnaire and use of the data. The three-point scale was administered to the students first, followed by five-point scale to understand the comfort level of students towards a particular scale. The pilot testing helped to identify unclear, repetitive and vague statements. Such statements were eliminated from the tool. Students reported higher comfort answering the five -point scale than the three-point scale, and expressed that the five-point scale gave a broader range to answer. Therefore, a five-point scale was adopted for the study. The pilot scale contained 62 statements but based on the feedback of students and after running a test of reliability, 51 statements were retained in the tool.

The Quasi Experimental Design

Determining intervention and control group of medical students

- Intervention - Semester Six
- Control-Semester Eight

Developing tool to measure change in attitude

- Gender Equitable Men Scale (GEMS)
- Nijmegen Gender awareness in Medicine Scale (N-GMAS)
- Abortion Assessment Scale
- Six New statements added

Pilot testing of the tool

- Comfort in answering 5-point scale as compared to 3-point scale.
- Of the 62 statement, 51 were retained after running a test of reliability.

5 | Profile of Participating Medical Colleges

5.1 Medical Colleges Implementing Action Research

As mentioned in Chapter 2, all the seven medical colleges had agreed to participate in the GME project. But four out of the seven medical colleges were acutely short staffed in the Department of Community Medicine and Gynaecology. This meant that the faculty might not be able to dedicate time for an entire semester, as they would also have additional charge in the absence of colleagues. Carrying out this study in colleges where there was a staff shortage would unnecessarily burden trained GME educators. Therefore, it was decided that though all seven medical colleges would teach the gender integrated medical curriculum in ways feasible to them, the study would focus only on three medical colleges namely, GMC Aurangabad, Swami Ramanand Teerth Medical College, Ambejogai and GMC Miraj as they had relatively better staffing in the Departments of Community Medicine and Gynaecology than the other four medical colleges.

Government Medical College, Aurangabad

GMC Aurangabad is one of the premier medical colleges of Maharashtra and the biggest tertiary care hospital for the entire Marathwada region. It is situated in the heart of the city in an area of 99 acres. The college admits 150 MBBS, 85 postgraduates, 120 Bachelor of Paramedical Technology (BPMT) and 50 B.Sc. nursing students. The 1177 bedded hospital provides medical services with ultra-modern facilities for patient care on an outpatient basis (OPD) and inpatient basis (IPD). The hospital receives patients from the neighboring states as well. The patient flow on an average is 27810/month in the OPD and 5650/month in the IPD (<http://www.gmcaurangabad.com/Overview.html>) There are four GME trained medical educators in GMC Aurangabad, two in the OBGYN department, one in the PSM department and one educator in the Internal Medicine Department.

Swami Ramanand Teerth Medical College, Ambejogai

Ambejogai is an administrative region in Beed district of Marathwada in the state of Maharashtra. The medical college at Ambejogai is a rural medical college and a central place in the Marathwada region of Maharashtra. It is the first rural medical college in

Asia. As of today all disciplines have a post graduate facility. The student intake capacity for undergraduates (UG) is 100. The hospital is 518 bedded and caters to 1100-1200 OPD patients daily. It has 90-100 IPD new admissions per day. (<http://www.srtrmca.org/history.html>) The government medical college Ambejogai has two GME trained educators, one from OBGYN and one from PSM.

Government Medical College, Miraj

Miraj medical college is situated in Sangli district of southern Maharashtra. It has a rural health and training center, Tasgaon attached to it. Medical interns are posted for rural internship to these locations to orient them to rural medical practice. The urban health center serves a large sector of the community from the urban locale of Miraj. At present, the hospital at Miraj has an inpatient strength of 320 beds and in addition has 76 beds for MICU, SICU, PICU and NICU. The admission capacity for UG is 150 students. GMC Miraj has three trained medical educators, one educator each from OBGYN, PSM and Psychiatry respectively.

5.2 Profile of MBBS students

The MUHS offers an undergraduate degree MBBS - Bachelor of Medicine and Bachelor of Surgery, the duration of which spans a period of 4.5 academic years which are divided into nine semesters. Each semester is of six months' duration. After completion of academic study, medical students have to complete one year of compulsory rotating internship. The eligibility for MBBS is 10+2, with 50 percent marks in Physics, Chemistry and Biology. The students entering the MBBS course are around 17-18 years of age. To get an entry in medical school, the candidate needs to appear for a common entrance test (CET) till recently. Now there is a common national eligibility cum entrance test (NEET). The NEET is common for government and private medical colleges; the Central Board of Secondary Education (CBSE) conducts NEET. The state medical colleges have a quota of 85 percent for their respective states.

All the three intervention sites namely Aurangabad, Ambejogai and Miraj receive 10-15 percent of the students from outside Maharashtra, while the remaining students come from different parts of Maharashtra. Educators noted that medical students take up any medical college due to growing competition and limited seats; all medical colleges, semi urban and rural are receiving students from the 'All India quota'. Aurangabad medical college receives students from Marathwada region of Maharashtra particularly Nanded, Latur and Beed.

- Ambejogai medical college receives students from Marathwada region. Ambejogai being a rural medical college, the inflow of students from the neighbouring rural areas is high.
- Miraj medical college receives students from Pune, Mumbai, Western Maharashtra, Nashik and Ahmednagar.

A total of 400 students in the experimental group and 300 in the control group formed the two batches for the purpose of this study.

Table 5 Total Number of Students in Three Medical Colleges

Medical College	Semester 6 batch (Experimental)	Semester 8 batch (Control)
Government Medical College, Aurangabad	150	150
Government Medical College, Miraj	150	100
Swami RamanandTeerth Government Medical College, Ambejogai	100	50
Total	400	300

An important concern noted by medical educators was the low attendance of students in the undergraduate course. Despite the fact that the Medical Council of India (MCI) mandates 75 percent attendance in each subject as eligibility to qualify for the examination, attendance of students continues to be low. One of the reasons why medical educators do not penalise students is because those in the UG course are busy preparing to secure PG seats. Hence many of them end up missing classes (John et al. 2015). For this implementation research to be meaningful, it was pertinent that students attend 75 percent of the lectures in Semester 6, as only then it would be possible to assess the knowledge and attitude of students towards gender integrated medical teaching.

5.3 Student's Strength at Intervention Sites

Table 6 Distribution of Respondents - Pre- and Post-test (Based on Site and Intervention categories)

	Control	Intervention	Control	Intervention
GMC Ambejogai	39	85	28	74
GMC Aurangabad	141	128	138	125
GMC Miraj	88	147	78	128
Total	268	360	244	327

	Distribution by Sex							
Name of Colleges	Male	Female	Male	Female	Male	Female	Male	Female
GMC Ambejogai	20	19	33	52	13	15	31	43
GMC Aurangabad	50	91	64	64	50	88	63	62
GMC Miraj	36	52	77	70	31	47	70	58
Total	106	162	174	186	94	150	164	163
Response Rate in Post-test								
Response Rate	Male		Female		Total			
Control	88 %		93 %		91 %			
Intervention	94 %		88 %		91 %			
Total	92%		90%		91%			

As is noted from Table 6 a total of 268 and 244 medical students responded in the control group for pre- and post-test respectively. A total of 360 and 327 students responded in the experimental/intervention group in pre- and post-test respectively. These figures are comparable to the enrolled number of medical students. The response rate was calculated based on the number of students attending the post-test out of those who were present for the pre-test.

6 Results

This chapter is divided into three parts - the first (6.1) part describes differences in attitudes of students based on sex and performance of students based on their attendance, the second part (6.2) describes the attitudes of students based on key themes as stated in the objectives and the last section (6.3) presents statistically significant statements.

Analysis

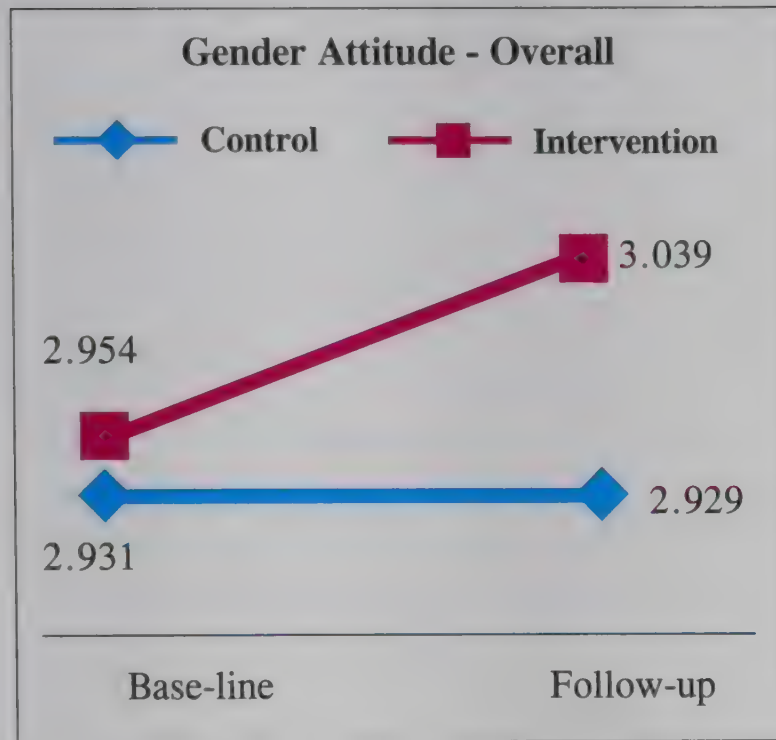
DiD (Difference in Difference) analysis was conducted to assess the change between intervention and control groups over time. This method compares the difference in average outcome in the intervention semester before and after intervention, with the difference in control semester, and helps in detecting the net effect of intervention on outcomes of interest. All DiD analysis was carried out adjusting for background characteristics - site of intervention, that is, medical college. The analysis was performed in STATA 12.0.

For the purpose of calculating the aggregate score, the mean score was calculated for all 51 statements. The findings show that there is a significant change in the attitude of students towards gender in the intervention category from pre-test to post-test. All statements show a positive change in the gender attitude of students. (Table of statements in annexure).

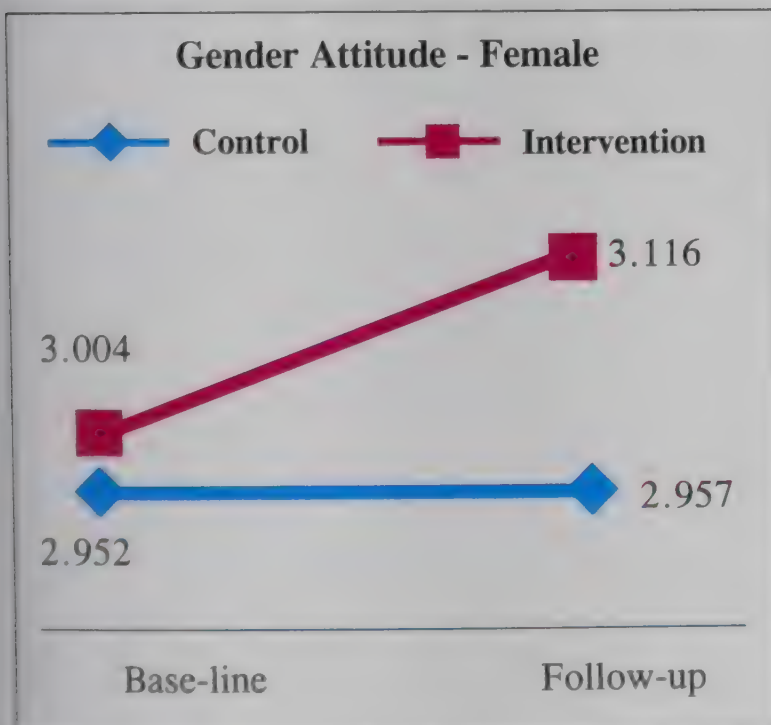
6.1 Gender Differences (Difference in Gender Attitude Score Based on Sex of Students)

Students in the intervention category show a positive change in gender attitude compared to their counterparts in the control group as seen in Graph 1. This overall change (within six months) in the attitude of students who were taught gender integrated modules as compared to those who were taught the existing curriculum indicates that gender perspectives can be built through teaching these topics in the medical colleges. Female students depict a significant change in the gender attitude at 5% level of significance compared to their male counterparts in the intervention category (Graphs 2, 3). This finding is not uncommon and has been found in other studies which state that as women they may have more interest in aspects of gender and there are chances that male counterparts may perceive gender related topics as more favorable to women.

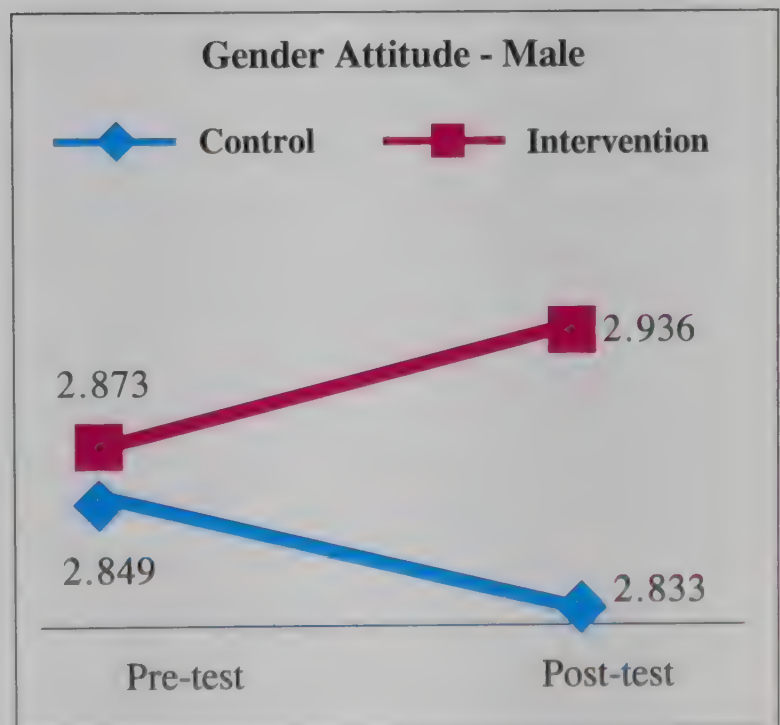
Graph 1: Gender Attitude - Overall



Graph 2: Gender Attitude-Female Students



Graph 3: Gender Attitude-Male Students



Graph 4: Gender Attitude Based on Attendance

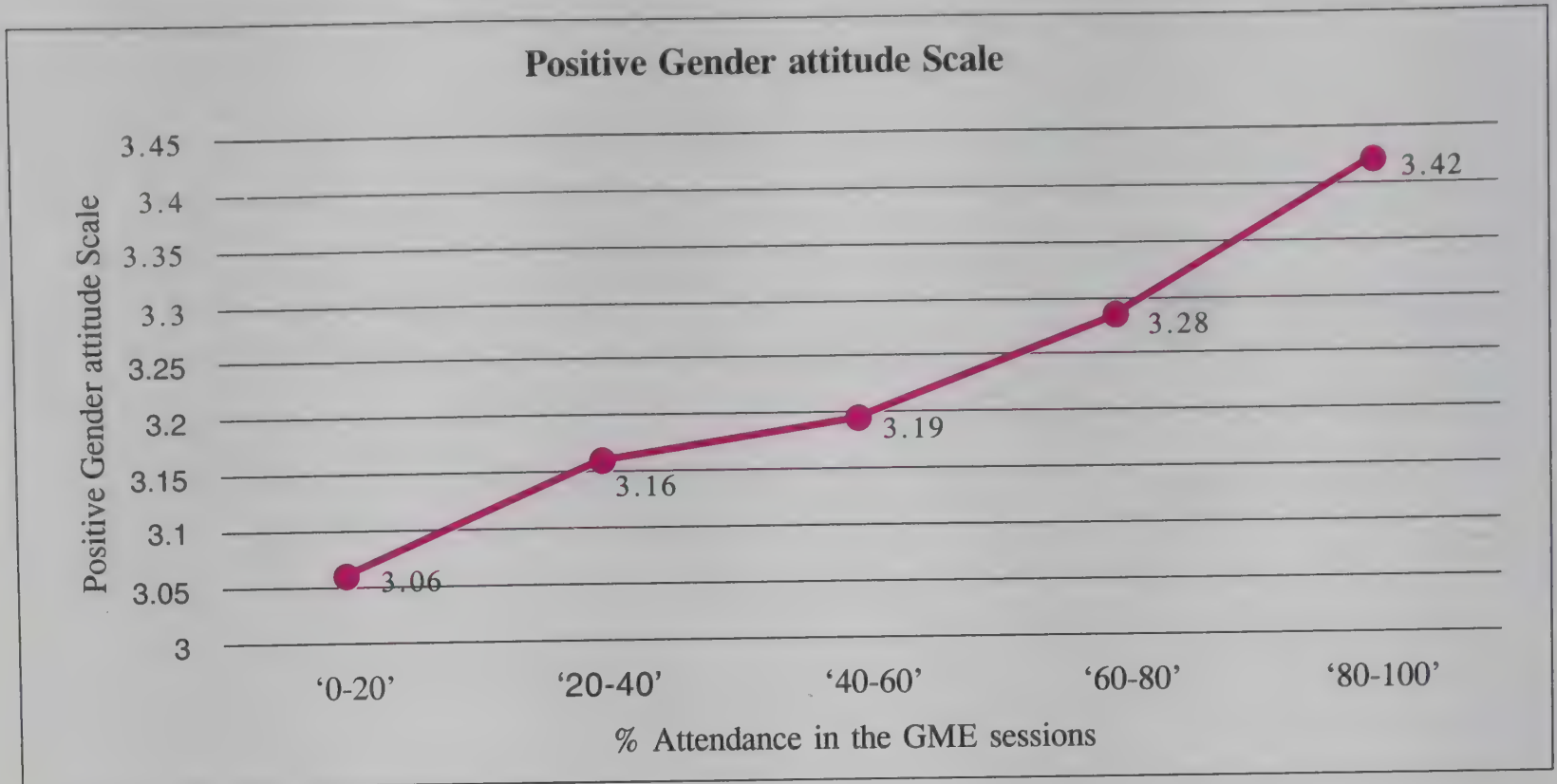


Table 7 Gender Attitude Based on Attendance

Percent	Attendance in the GME sessions	N
0-25%	5-6 lectures	63
25 - 50%	10-11 lectures	84
50 - 75%	15-16 lectures	106
75 - 100%	21 lectures	73

It was also found that the number of lectures attended by students had an impact on their gender attitudes. The students who attended more lectures showed an enhanced positive gender attitude. Graph 4 shows how the percentage attendance of GME lectures led to a better gender attitude. The highest positive attitude was seen in students attending the maximum number of gender-integrated lectures. This reiterates the fact that gender as a social determinant cannot be relegated to a stand-alone lecture or a stand-alone elective course, rather they need to be mainstreamed in medical curriculum to enhance an understanding of gender concerns within medical/health issues (Table 7). The gender concerns were woven across all lectures hence even low attendance has ensured that some knowledge on gender has been imbibed.

6.2 Results based on Key Themes related to GME

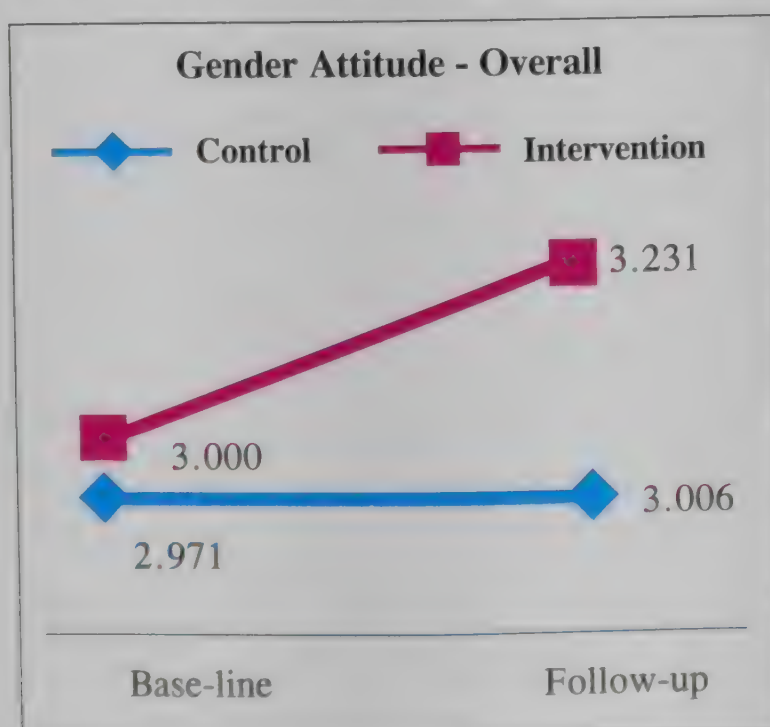
This section specifically looks at gender attitudes of students in connection with specific themes integrated in a total of seventeen lectures, nine in Obstetrics and Gynaecology and eight in Community Medicine.

- i. Attitudes towards Gender roles of men and women
- ii. Gender sensitivity in addressing health concerns
- iii. Assessing gender stereotypical attitudes towards patients
- iv. Attitudes towards women and girls seeking abortion services
- v. Attitudes towards delivering reproductive health services to women and men
- vi. Attitudes towards Sexuality
- vii. Attitudes towards Gender based Violence (GBV)

i. Attitudes towards Gender roles of men and women

As seen in Graph 5, significant increase at $p < 0.01$ in the mean attitudinal scores of students is observed among the intervention semester from baseline to end line. The net increase in the mean score adjusted for site of intervention is significant in the intervention category of students.

Graph 5: Attitudes towards Gender roles of men and women

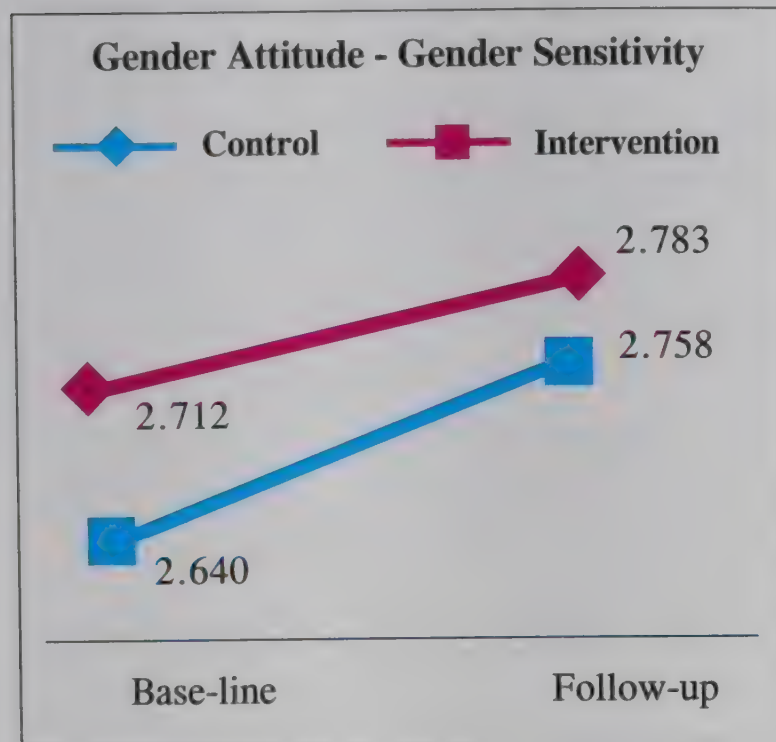


The positive shift can be ascribed to the gender integrated content taught to students of intervention category. The content was introduced through an additional lecture explaining differences in the terms, 'gender' and 'sex' which also integrated in different medical topics throughout Semester 6 to ensure reiteration of gender concerns. In the additional lecture, students recognised how gender is a social construct through games and exercises. The story of twins was used to discuss social construction of gender. The story traced the journey of a girl and boy from their birth to old age. Examples of clothes worn, toys purchased choice of career, access to public and private spaces and right over property were discussed in the context of gender. Normative gender roles such as fetching water, cooking on wood/coal fires expose women to different health hazards, but these are not recognised by the formal health system. Students reflected upon their experiences of gender by what they were allowed to do or not do as girls and boys. Statements such as 'men are rational and women are emotional' were discussed in the context of notions of gender and how these are not based on facts. Such stereotypes are perpetuated through newspapers and social media. Educators screened short audio visual (AV) presentations on how gender is depicted in advertisements and movies. The concept of sexism in medicine was discussed with students using examples of certain disciplines being considered as masculine, while others feminine and an unwritten rule about what women and men should choose in the medical profession. The students' attention was also drawn to the fact that none of the medical textbooks carry information on differences in gender and sex and how gender impacts access to health services as well as health outcomes. The concepts of transgender identities and alternative sexual orientations were introduced too. These lectures enabled students to see that gender operated at all levels, individual, family, community and even in the medical profession.

ii. Gender Sensitivity in addressing Health Concerns

As depicted in Graph 6 there was an increase in the mean attitudinal score for the theme on 'gender sensitivity' amongst the intervention group of medical students. However, this increase was not significant.

Graph 6: Gender Sensitivity in addressing Health Concerns



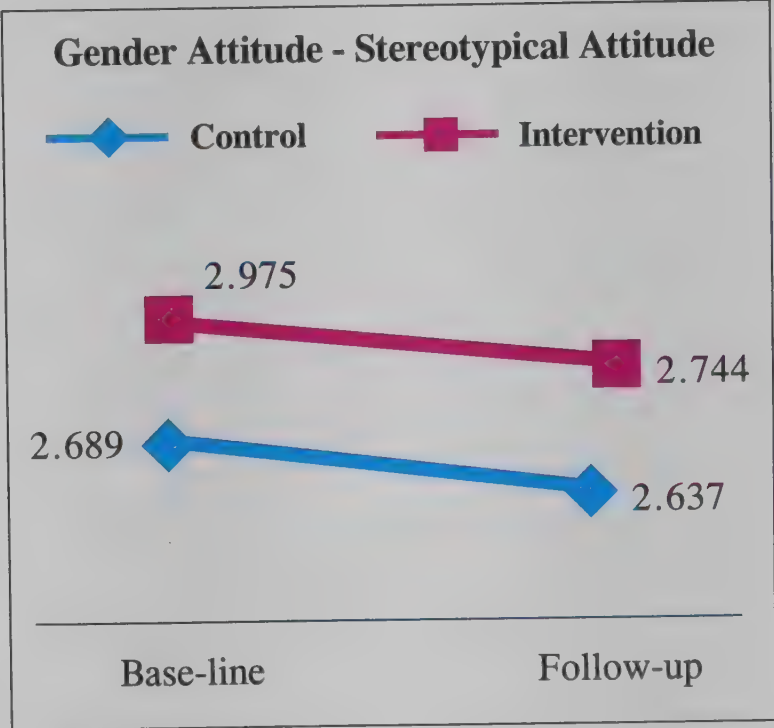
The content related to this theme focused on understanding gender based vulnerabilities and addressing them. In topics such as occupational health, specific additions were made with regard to women working in the informal sector and recognising effects of long work hours, lack of short breaks at work and effect of exposure to biological and chemical agents on pregnant women. Similarly, while teaching comprehensive health care, students were oriented to gender based differences in vulnerabilities to health problems, access to health services, consequences of a health condition and social consequences of ill health. Students were oriented to the fact that differences in social roles assigned to women and men affect the "degree to which women and men have access to, and control over, the resources and decision-making needed to protect their health". These differentials result in inequitable patterns of health risk, use of health services and health outcomes. Traditionally, the role of women has been seen as nurturers, dependent and family oriented, these continue to restrict women to the household and limit their mobility as well as access to and control over financial resources. This in turn severely compromises their access to information and health care services. Examples of women living with tuberculosis and HIV amongst other illnesses were discussed in classroom settings. Gendered access to health care was explained in terms of differential access and expenditure on women's health as households often prioritise men's health over women as men are considered the main earners of the household. Gender based consequences of HIV on women such as facing social isolation and desertion, and the ones that men face such as losing employment and facing stigmatization were also discussed. Another concept that students were exposed to was that of obstetric violence. This was introduced in the topic related to urinary

disorders. Genital fistulae as a medical condition occurs due to mismanaged labor and indiscriminate use of episiotomies. Such a condition can be prevented with proper management of labor. Each of these examples brought in the need for gender sensitivity, as developing such a lens would lead to change in practices. Though the content dealt with gender based vulnerabilities and how to address them, the scores make it evident that students may not have completely grasped its nuances. Gender specific issues related to various health complaints and how to identify and respond to these may take time to assimilate. This may require concrete examples to be included in teaching so that it enables students to comprehend how sensitivity needs to be put into medical practice.

iii. Assessing Gender Stereotypical Attitudes towards Patients

As seen in Graph 7, marginal fall in the mean attitudinal score was seen for medical students in the intervention category when compared to their pre-test scores in the theme, "assessing gender stereotypical attitudes of medical students towards patients". However, this fall is not statistically significant.

Graph 7: Assessing Gender Stereotypical Attitudes towards Patients



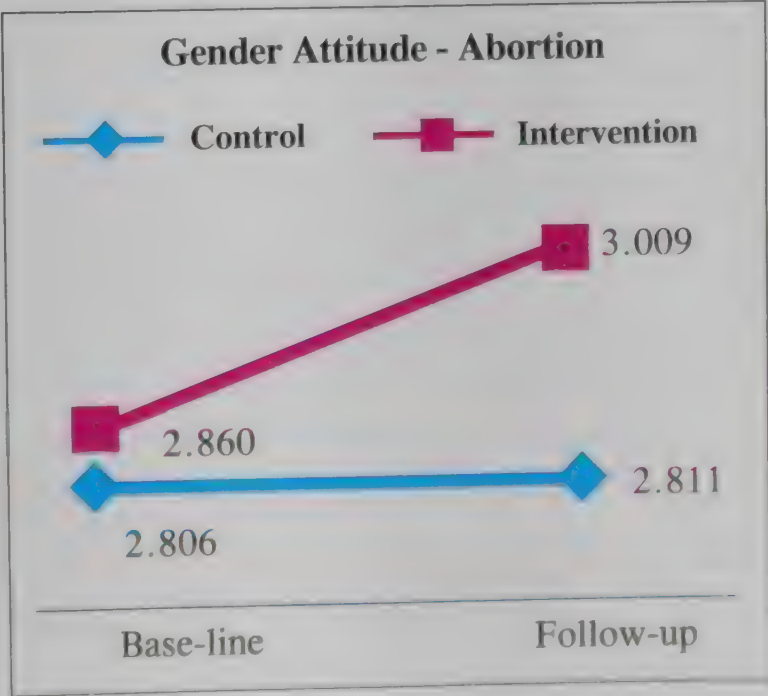
Content pertaining to gender stereotypes and dispelling notions about women was discussed in the foundation lecture on gender and sex as well as integrated in topics such as medical termination of pregnancy, menopause and health implications. In foundation lectures, myths such as women expect more emotional support from doctors than men do, they have unreasonable expectations from doctors, male patients are less demanding of doctors,

and male patients understand doctors' approach better than women, were discussed at length. Women's health complaints such as headache, tiredness, and chronic pains are considered non-serious by doctors, but these arise from carrying out the nurturing and caregiving roles in the family. Because these roles are not recognised formally, the tendency to trivialise them arises. Gender stereotyping concerns were also raised in the context of lack of access to abortion services for single, widowed women and girls. This helped them to recognise that single women and girls can/may be sexually active as single men/boys. Students were also provided with information on reasons for delay in seeking abortions, which are often not probed into and women are blamed for their condition. The tendency of doctors to blame women, when they approach late for abortions was also raised. Class disparity amongst doctors and those coming to them leads to stereotyping users especially women, and the class privilege gives them the authority to make decisions on behalf of patients. The discussions led students to recognise the implications of gender stereotyping and how such notions hindered women's access to health care in particular.

While some change is noticeable, it is clear that we have a long road to traverse to change attitudes and behavior based on attitude imbibed largely through socialization. As was seen in the situational analysis, medical educators reported several stereotypes about their patients. They reportedly believed that patients are responsible for their health conditions as many of these conditions are avoidable. This amounts to blaming the patients for their illness! (John et al. 2015). The slight fall can therefore be related to the dominant attitudes prevailing among health professionals, wherein they perpetuate several stereotypes about patients.

iv. Attitudes towards Women and Girls seeking Abortion Services

Graph 8: Attitudes towards Women and Girls seeking Abortion Services



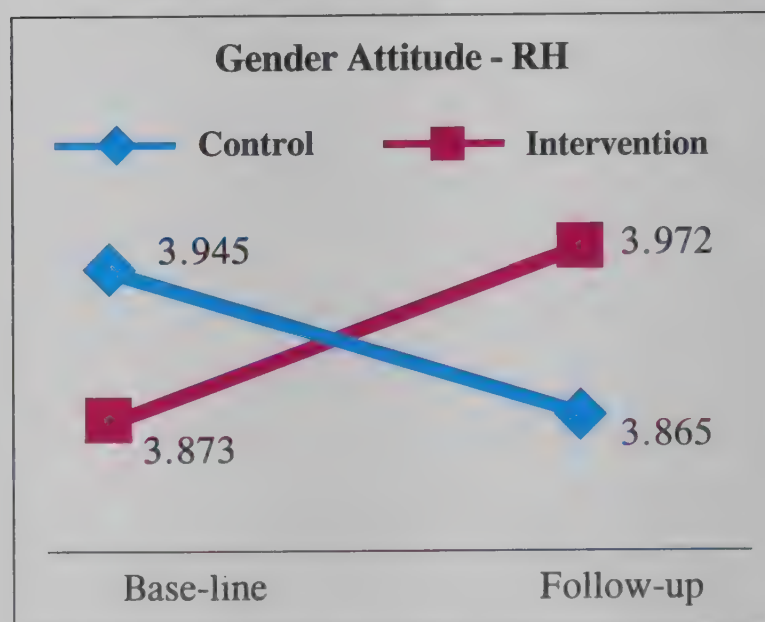
A significant increase at $p < 0.01$ in the mean attitudinal scores of intervention students was observed from pre-test to post-test. The net increase in the mean score was significant in the intervention category of students as seen in Graph 8.

This positive shift can be attributed to the thrust of gender integrated teaching topics such as contraception, procedures related to medical termination of pregnancies, conflation of MTP and PCPNDT. The content of these lectures dealt with implications of ad hoc procedures for medical termination of pregnancies such as asking for spousal consent, recording police complaint when single women sought MTP. Doctors often associate delays in seeking abortion services with are carrying out sex selective abortions. Implications of such assumptions were discussed at length. Students were familiarised with a range of reasons for delay in seeking abortions such as lack of knowledge about being pregnant, restriction of mobility by family members, and late realisation that pregnancy may be an outcome of rape. Medical students were oriented to the pitfalls of not providing women with timely services, such as chances of women being abused, the social and psychological impact of carrying an unwanted pregnancy full term and lack of support by family members. While teaching the topic, 'family welfare and population control', students were presented a critical view of terms such as 'family planning'. Such a term does not allow access to contraceptives to a host of people who may be outside the institution of marriage. People in same sex relationships and single people may also need contraceptives but they do not get covered in the family planning programs. Students were exposed to the human rights perspective on population control and coercive practices led by state programs to limit families. Case studies related to unethical practices in sterilization camps in Bilaspur and Chattisgarh were discussed, and the ethical role of doctors in such camps was emphasised. The role of male partners in contraceptive decisions was emphasised and skills for speaking to couples were imparted through the gender-integrated content.

v. Attitudes towards Delivering Reproductive Health Services to Women and Men

A significant increase in the mean attitudinal score was observed among the intervention group towards reproductive health services delivery for men and women in Graph 9. A sharp fall in the attitudes of medical students in the control group has been observed in the post-test results.

Graph 9: Attitudes towards Delivering Reproductive Health Services to Women and Men

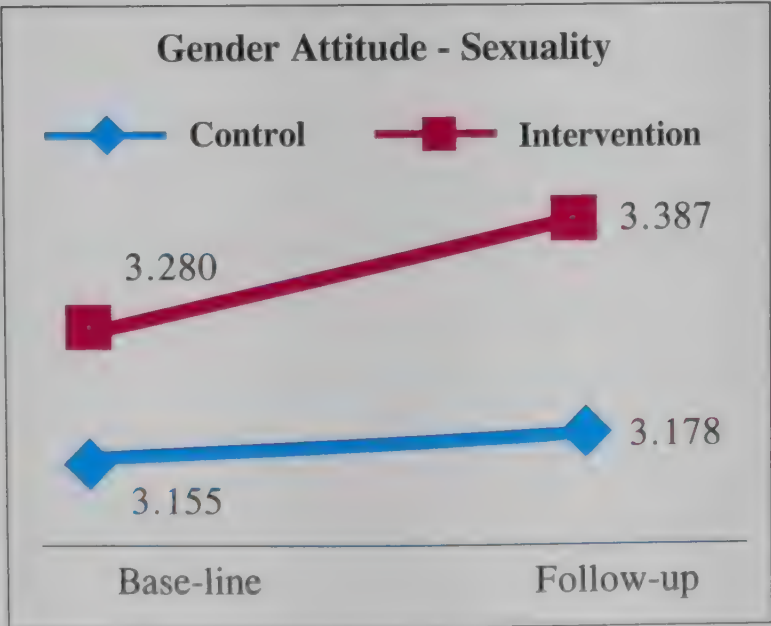


This theme incorporated concerns of sexual and reproductive health of adolescent girls in medical topics such as physiology of menstruation and sexual and reproductive health of boys and girls. Though menstruation is a physiological process, several taboos exist at the familial and societal levels. These lead to secretive menstrual practices known to jeopardise health of young girls and women. For example, medical students were familiarised with data on lack of toilets for girls in public schools and its direct association with girls dropping out from school with the onset of menarche. Special focus was also given to the issue of hysterectomies conducted on girls with psychosocial disabilities. Dangers of unindicated hysterectomies for menstrual management in such girls were discussed. Skill aspects provided them with steps to be taken to discuss menstrual management with both care givers and girls with psychosocial disabilities. The use of case studies and role play further enhanced skills in speaking to girls and women about menstrual issues. The content also included the concerns of adolescent boys about their sexual and reproductive health.

vi. Attitudes towards Sexuality

Graph 10 shows that the mean attitudinal score for medical students in the intervention category increased to some extent, but the shift has not been a significant one.

Graph 10: Attitudes towards Sexuality



Sexuality is a concept integral to sexual health, but medical curriculum does not discuss the concept of sex sexuality and sexual orientation. Though Semester 6 comprises topics related to infection of the genital tract, sexually transmitted infections and reproductive health, the content does not expose students to the discourse on sexuality and sexual practices. The absence of any discourse on sexuality in medical curriculum indicates the

possible discomfort and belief that sexual practices and sexuality are private matters. Hetero-normativity is assumed, which is a matter of deep concern. Students were oriented to the framework of sexual and reproductive rights as enshrined in the goals laid down in the International Conference on Population and Development (ICPD). Students learnt that 179 countries agreed to strengthen access to reproductive and sexual health services and that India was one of them. The goals laid down in ICPD provide a road map for operationalizing sexual rights for not just married people but also for adolescents /single/ same sex couples.

The content focused on developing an understanding of the concept of 'sexuality'. Sexuality was discussed as a central aspect throughout life ranging from sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. It is expressed through thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships. Students were oriented to an understanding of sexual health as that would be the focus of doctor-patient interaction. But for this to take place, doctors have to develop the language and skill to talk with people on sexual health, which is missing in the existing medical curriculum. Doctors should also be aware of societal stereotypes centred on the sexualities of men, women and transpeople. The content debunked myths such as *'Sexual desire is lower in women than in men'*, *'Men are always ready to have sex'*, *'Men should be embarrassed if they are unable to get an erection during sex'*, *'It disgusts me when I see a man acting like a woman'*. These myths were discussed in the context of gender roles that are ascribed to men and women. The prescribed role for women in sexual relations is to be passive whereas for men it is to conquer and exercise power over the women's body to prove masculinity. Such gender roles do not allow for women to make decisions about their sexual partner, or protect themselves from unwanted pregnancies or infections or to seek sexual pleasure. For men, their prescribed role does not allow them to discuss sexual health because of pressure of sexual performance. These roles have a debilitating effect on both men and women.

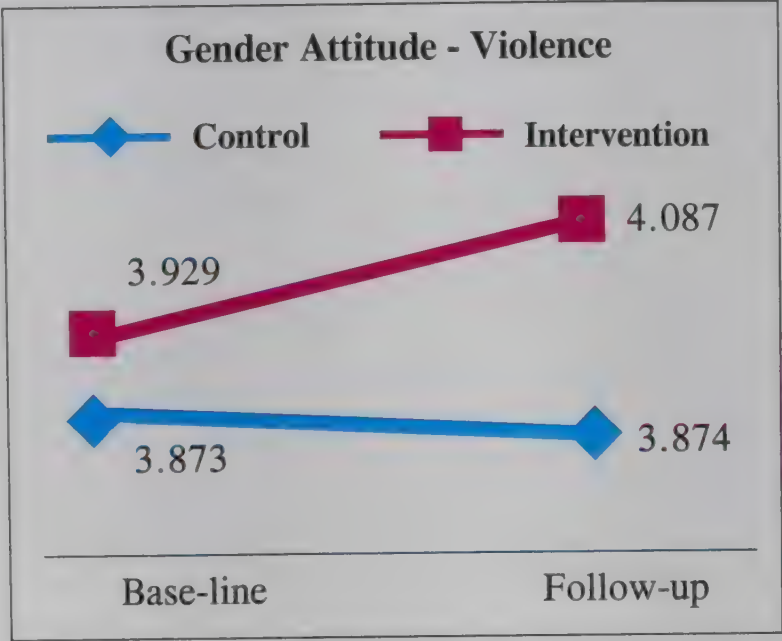
Students were also made aware of contraceptive needs of people in same sex relations, and transgender persons. However, the health system mistreats them and also disregards their health concerns. Students were oriented to recognise their health needs and also respond in a non-judgemental manner.

But the issue of sexuality is a nuanced one. The fact that the increase was not significant indicates that this topic needs to be reinforced in several and different ways so as to develop comfort amongst doctors in engaging with issues regarding sexual health of men and women.

vii. Attitudes towards Gender Based Violence

As seen in Graph 11, there is a significant positive change in the attitude of students in the intervention group towards gender based violence compared to their baseline scores.

Graph 11: Attitudes towards Gender Based Violence

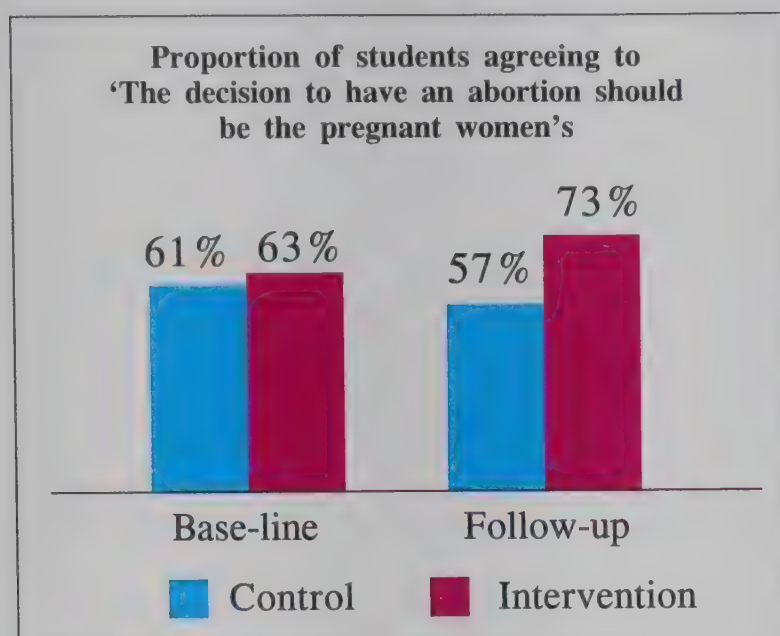


Students in the intervention group were oriented to gender based violence as a public health issue. The topic of gender based violence was introduced as a foundation lecture and was also integrated in topics such as sexually transmitted infections/reproductive tract infections, medical termination of pregnancy and family welfare. The foundation lecture focused on understanding the phenomenon of violence as an abuse of power. Myths such as *"violence being a personal matter"*, *"it happens in poor and illiterate families"*, *"violence is inflicted by alcoholic men"* were countered with latest evidence from India using National Family Health Survey (NFHS) and National Crime Records Bureau (NCRB) data as well as global evidence based on WHO data. Students were exposed to different laws such as Protection of Women from Domestic Violence Act (PWDVA 2005), Protection of Children from Sexual Offences Act (POCSCO 2012) and Criminal Law Amendment to rape (CLA 2013) they were oriented to the obligations by medical professionals. Medical students were made aware of rape myths in forensic examination, especially the 'two finger test' and comments on hymeneal status. Scientific evidence that questioned such tests was presented and damaging consequences of such reports were discussed. The content also offered concrete suggestions for the role of medical students in identifying forms of abuse, providing emotional support, medical support and providing information and referral to the survivor. The positive shift in the medical students belonging to intervention group indicates that they would have recognised their role in responding to gender based violence.

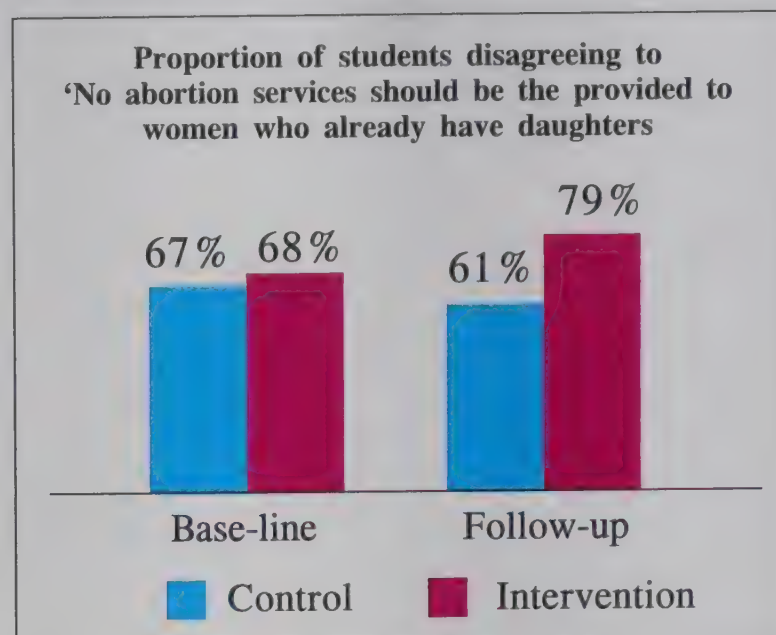
6.3 Examples of Statistically Significant Statements

This section describes the pre- and post-test responses to few statements that showed significant positive change. Eleven such statements are presented here to illustrate the change in gender attitude.

Graphs 12 and 13 Attitudes towards Access to Abortion Services

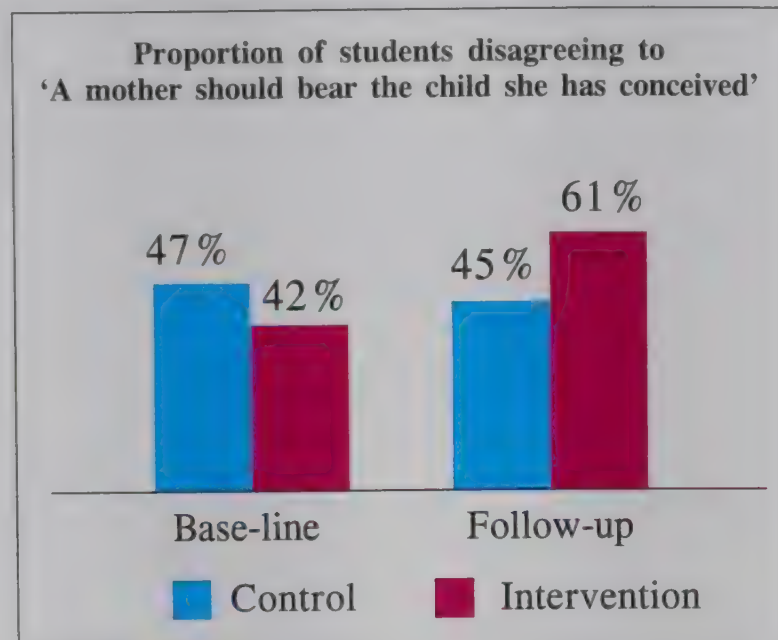


Graph 12: A clear, positive and significant shift was discernible in the intervention group (from 63 % to 73%), from their base line response. A higher percentage of students tend to agree that the decision to have an abortion should be solely of the pregnant woman. This can be attributed to skilful introduction by gender trained medical educators on how gender affects women's access to contraception and their decision to become pregnant or seek abortions. These aspects were included during the lecture on medical termination of pregnancy. Students were able to develop their understanding on how gender affects women's rights over their bodies and how they have limited decision making related to sexual practices, use of contraception and whether to have children.



Graph 13: Shows a higher proportion of disagreement (68% to 79%) with the statement in the intervention group in the follow up as compared to what was seen in the baseline survey. The baseline survey indicates that medical students have already imbibed notions that women having daughters and seeking abortion services must be doing so because they do not want another daughter. The belief that women having daughters and coming in for second trimester abortion are doing so after sex determination is one of the most prevalent notions amongst doctors. This was challenged by introducing compelling reasons for women seeking second trimester abortions such as non-realisation of pregnancy by women, refusal to allow abortion by husband and family members and fear of community backlash which come in the way of seeking timely access to services and that is how women reach the health system and doctors in the second trimester of pregnancy. A positive shift in the attitude indicates an acknowledgment and sensitivity among students that abortion services should not be denied to women on any account.

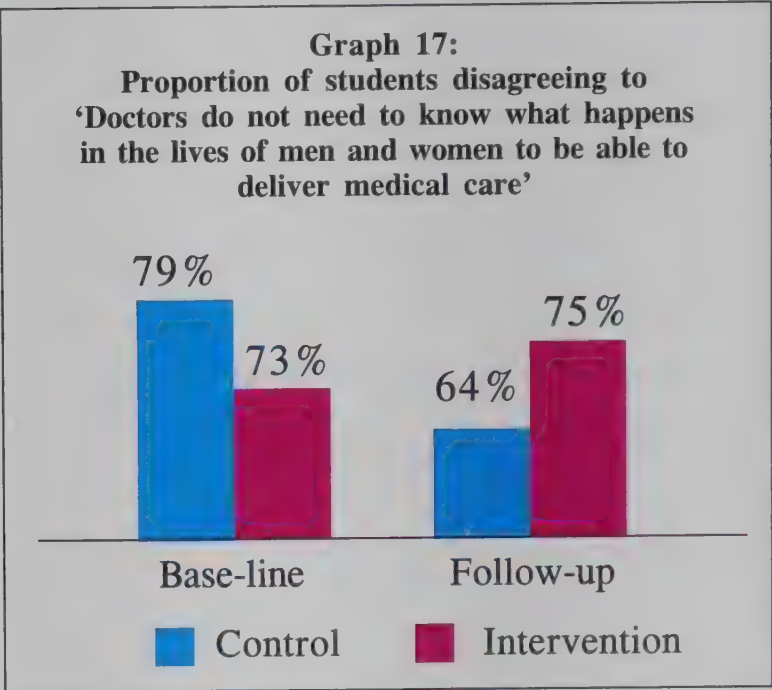
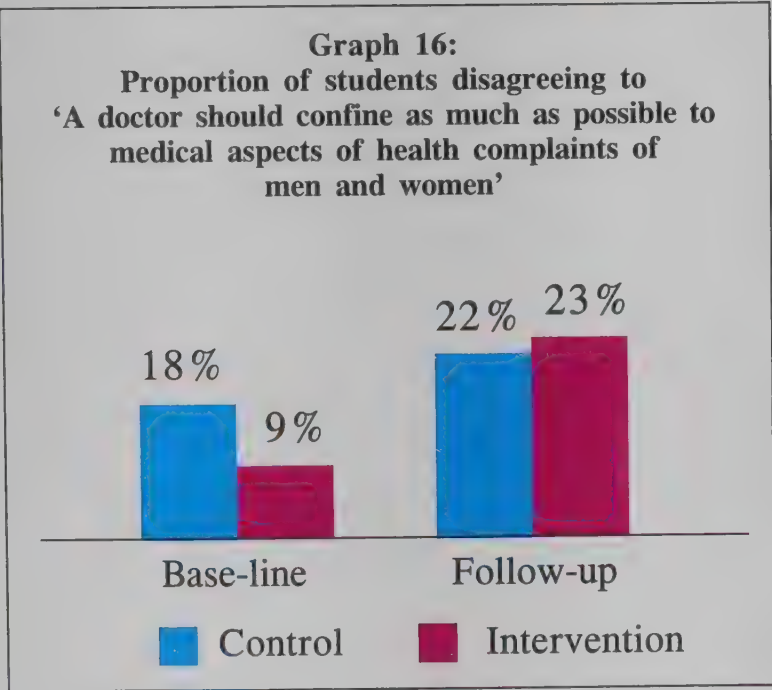
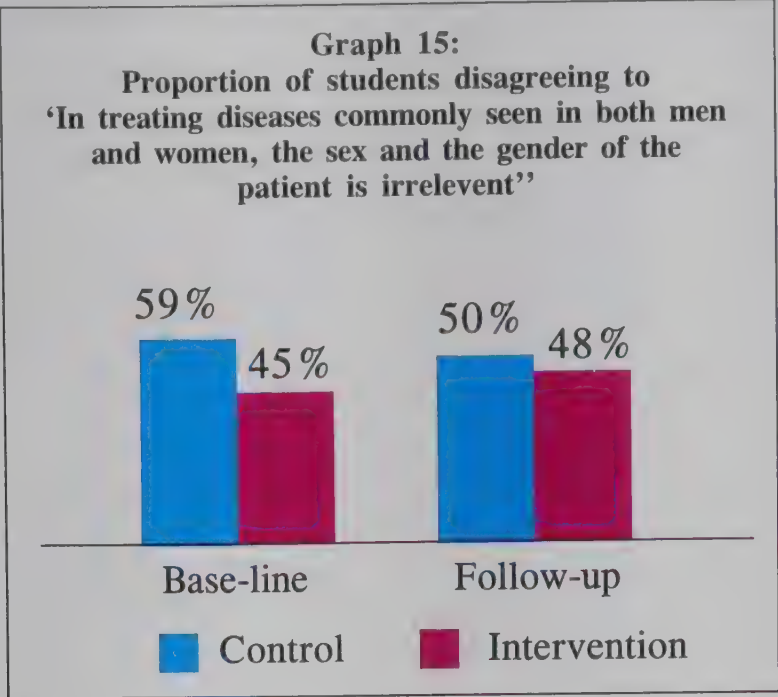
Graph 14: Recognition of Gender as a social construct



Graph 14: shows more students agreeing to the statement that a mother should bear the child she has conceived in both control and intervention group but a significant positive change is seen in the post-test score of the intervention group (42 %to 61%). The reason for being less supportive of this statement can be attributed to an increased recognition of gender roles thrust on women such as being a mother and carrying ahead a pregnancy even if it unwanted as she is seen in the role of a carer and nurturer. The social construction of gender was taught as part of additional lectures, where it was explained that women are socialised to believe that child bearing and child rearing are their primary roles. Even if biologically, it is women who can give birth as they have an uterus, child rearing can be done by men and women equally. So this notion that a woman must bear the child she has conceived was questioned so that students can explore whether or not a woman wants to proceed with a pregnancy, thus offering non-judgemental care. Students' exposure to a sexual and reproductive health framework enabled them to recognise sexual and reproductive rights of women and understand that all pregnancies are neither wanted nor planned and neither do all women want to be mothers. However, social norms often compel women to carry forward a pregnancy despite its being unwanted. The positive shift indicates an understanding that women should have the autonomy to decide whether to continue or discontinue the pregnancy.

Graph 15, 16, 17: Developing Gender Sensitivity in Medical Students

These Graphs comprise of select statements assessing gender sensitive attitudes of medical students towards patients.

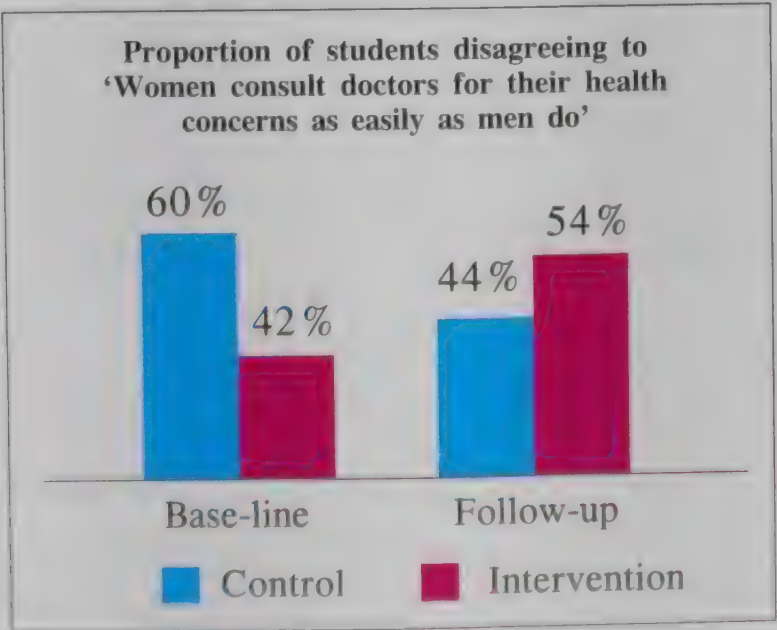


The statement 'In treating diseases commonly seen in men and women, the sex and the gender of the patient is irrelevant' showed a significant positive change in the intervention group (45% to 48 %)in the post-test. This change can be attributed to a better understanding of the role of gender in treating health conditions. Traditionally, medical knowledge was conceptualised as neutral, but it is now clear that this does not take into consideration gender effects on health conditions, health seeking behaviour and health outcomes. Students were enabled to use a gender lens to understand health conditions affecting both men and women and analyse how gender contributes to health inequities. A clear distinction between sex and gender was made as medical literature may present disaggregated data based on sex (male and female) but what is required is a gender based analysis. Specific

examples of health conditions such as malaria and tuberculosis (TB) were used to discuss the role of gender in these infections. Students were oriented to WHO tool for gender analysis which posed questions such as; nature of activities carried out by women and men and factors that expose them to health hazards, negotiation capacities of women and men at house hold to access health care, women's and men's access to resources and control over them and finally gender norms that influence health.

Two other statements on the theme on gender sensitivity also show positive shift. 'A doctor should confine as much as possible to medical aspects of health complaints of men and women' (9% to 23%) and "Doctors do not need to know what happens in the lives of men and women to be able to deliver medical care" (73% to 75%). The scores indicate that a significantly large number of medical students in the intervention category disagreed with these statements. Gender integrated teaching focused on the importance of understanding social circumstances and context that can lead to or aggravate health problems. Therefore, if doctors have to provide comprehensive health care, they ought to recognise factors that lead to health inequities. Social determinants such as division of labour and activities carried out, gender roles assigned to men and women, access to and control over resources and gender based health seeking are linked to health outcomes of men and women, and without this knowledge doctors will not be able to deliver health services in an appropriate and gender equitable manner. One of the Examples given included those treating persistent anaemia with medications without recognising underlying causes that may be rooted in gender roles of women, similarly treating repeated aches/pains in women patients without understanding the nature of work they are involved in and what can be done to prevent these conditions.

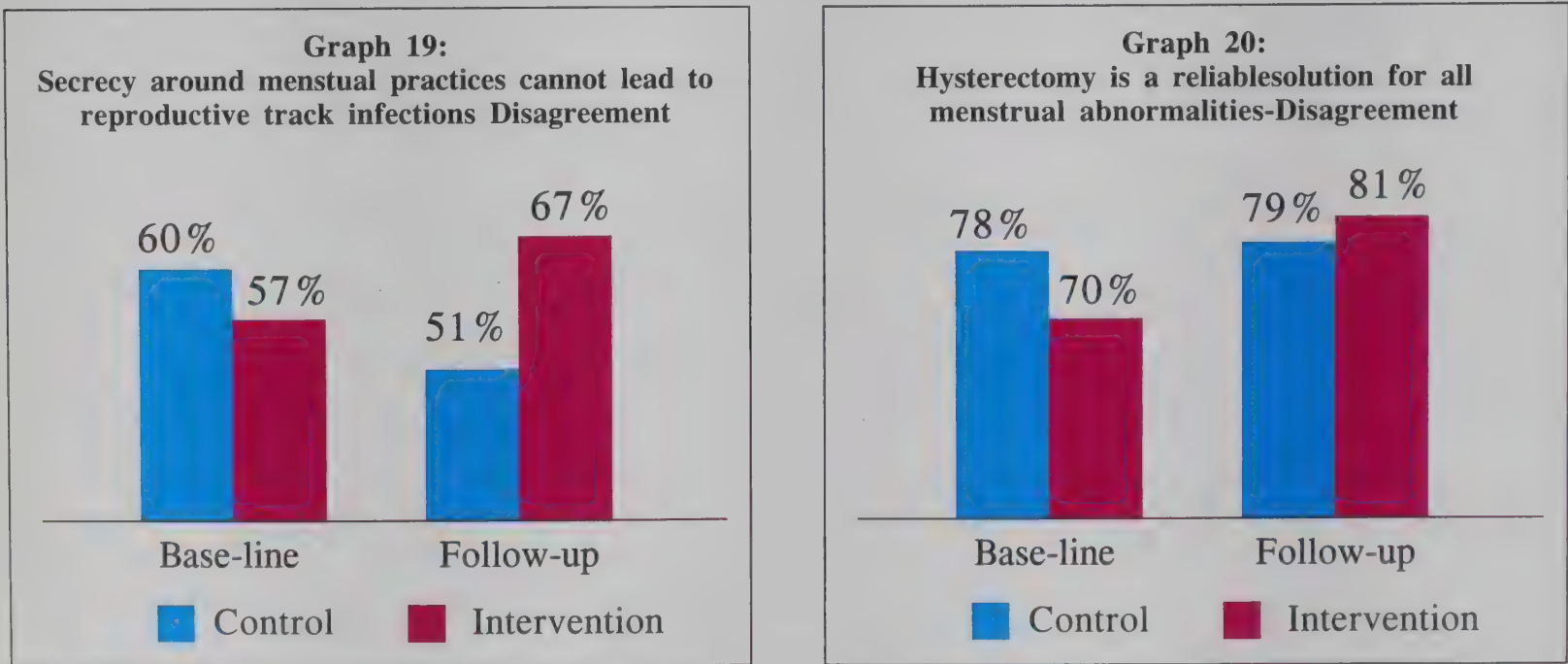
Graph 18: Gender Stereotypical Attitudes towards Women



As indicated in Graph 18: 'Women consult doctors for their health concerns as easily as men do', showed a significant increase in the proportion of students disagreeing with the statement (42% to 54%). Gender integrated medical teaching focused on the reasons why women are unable to access health care as easily as men. The modules throw light on the obstacles that women face while accessing health services, such as no economic independence, secondary status ascribed to women and their health, restrictions on mobility and sociocultural norms which prevent women from freely discussing their health problems, especially reproductive and sexual health problems. There is an overall neglect of women's health problems. Studies have shown that women reach a facility for treatment only when the health complaint affects their daily functioning. All these factors contribute to reduced access of health services by women. Examples related to disadvantages that women face and health complaints that get reported late were woven into different medical topics. Menstrual disorders, white discharge, reproductive tract infections, tuberculosis and non communicable diseases such as diabetes, heart conditions and hypertension get reported at a later stage which can have a debilitating effect on them. Thus, the teaching focused on skills of doctors to identify reasons for such delays and understand how gender discrimination can affect women's access to health care.

Graph 19 and 20 : Attitudes towards Reproductive Health of Women and Girls

Graphs 19, 20, are related to assessing the gender sensitivity of medical students towards reproductive health concerns of women shows improved responses.

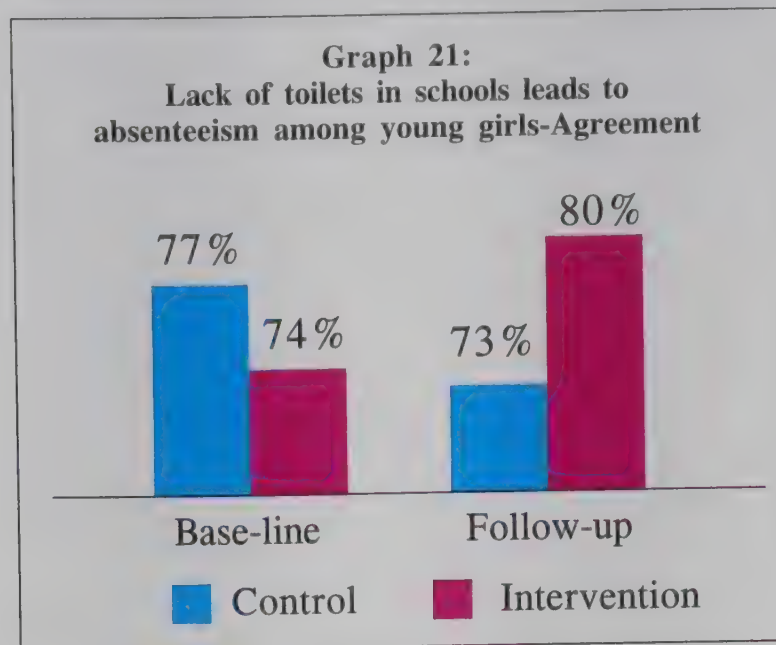


The statement, 'secrecy around menstrual practices cannot lead to reproductive tract infections' shows a positive shift in the proportion of students disagreeing with this statement compared to their base line response (57% in the baseline to 67% in the post

test). Such a positive shift can be attributed to the gender integrated teaching that took into account shame, stigma and taboos related to the issue of menstruation, unlike erstwhile teaching that was restricted to only the physiology of menstruation. The gender integrated component focused on how young girls are stigmatized after the onset of menstruation, which leads them to secretive menstrual practices. Additionally, girls do not have access to appropriate information related to menstruation, its occurrence, hygiene as well as use of sanitary napkins. Such lack of information increases their risk to infection. Therefore, medical students were equipped to understand the importance of counselling girls and their families with appropriate and adequate information about menstruation and dispel myths that girls and their families may have.

The statement, 'Hysterectomy is a reliable solution for all menstrual abnormalities' shows a higher proportion of students disagreeing with the statement compared to their base line response (70% in the baseline to 81% in the follow up.) This statement is a commonly held notion amongst doctors. It emerges from the belief that once women fulfill their reproductive role of producing children, the uterus does not have much use. Hence, when women report with complaints of excessive bleeding, fibroids or white discharge, doctors often advise hysterectomy as a cure for these problems. Also, most of the health programmes look at women in the role of a 'mother', but once the childbearing is completed there is no priority given to other reproductive health complaints. To add to this programmatic blind spot, women face barriers at the household level in accessing health facility for treatment of menstrual problems and may therefore prefer a quick solution like hysterectomy. Gender integrated medical teaching therefore emphasized on negative health consequences owing to unindicated hysterectomies such as painful sexual intercourse, hot flushes, palpitations, early menopause if the ovaries are not removed and psychological health consequences. Medical students were also encouraged to understand the effects of indiscriminate use of hysterectomies and were encouraged to think of alternative treatments for menstrual illnesses.

Graph 21: Gender Sensitivity towards Adolescent Girls



Graph 21 related to 'lack of toilets in schools leads to absenteeism among young girls' showed a higher agreement rate amongst medical students post intervention when compared to the baseline (74% to 83%). Lack of toilets for girls in schools leads to a host of health problems, this concern increases when adolescent girls start menstruating. Lack of toilets leads to absenteeism as well as dropping out of school. Health problems associated with not being able to urinate/defecate for long hours can also cause urinary as well as reproductive tract infections. Hence, while treating such infections doctors need to be cognizant of the factors that lead to such infections. The response to the statement shows a positive shift indicating the students' agreement that lack of toilets leads to absenteeism in girls. Though this statement is not directly related to the realm of medicine, it is important for doctors to have a holistic understanding of the water and sanitation condition in the society, which has an impact on health and other aspects of women and girl's life. The absence of toilets or unclean toilets in schools can cause UTI/RTI among school going girls.

The changes in the gender attitudes of students who participated in the intervention where gender integrated modules were taught as part of Semester 6 have been presented here. As reported here, there was an overall positive shift in gender attitudes that affirms the effectiveness of the gender component in each lecture being taught to medical students. Further analysis based on specific themes highlights how the content may or may not have been sufficient to change attitudes which have been imbibed as part of socialization.

7 | Teaching Gender Integrated Modules- Insights of Medical Educators

As part of the project, the CEHAT team observed some of the lectures and documented these. This was done to gauge the feasibility of the integrated content, comfort of the educators, actual time spent by them in teaching the content, responses of the students and so on. Additional lectures on 'Sex and Gender' and 'Gender based Violence' (GBV) were given to all the participating medical colleges. Besides these, medical topics pertaining to MTP, family planning, sexually transmitted infections, physiology of menstruation, concept of life cycle approach and RMNCH+A, access to legal abortion, informed decision making and counseling for contraception and gender sensitive healthcare were also documented; the rationale being that these topics included significant gender components in them.

The intervention research team had prepared power point presentations based on the GME content for every lecture and these were provided to the educators. While some of the educators used the Power Point presentations as provided, others improvised and adapted them to make them more appealing to the students, by adding relevant photographs, recent newspaper clippings to relate the content to the prevailing context, providing examples of contemporary movies which display changing gender norms in society and so on. The educators used an adequate mix of theory and practical examples in their lectures.

Educators from three medical colleges expressed a positive experience of implementing GME. They found that participatory methods used to teach gender integrated lectures generated interest in students. Even those students who were otherwise not attentive in the classroom took active part in the discussion of case studies. Reflections from educators brought to front that earlier medical curriculum was taught in a technical style without much scope for reflection or questioning by the students. Gender integrated modules invoked curiosity in students and encouraged them to question stereotypes about patients. In particular, educators noted that discussion on reasons for delay in seeking abortions, denials of second trimester abortions, gender and its association with communicable diseases and sexual violence as a health issue evoked high interest in students. Educators

attributed consistent attendance of students throughout Semester 6(intervention semester)to the innovative teaching methods.

Medical educators made several efforts to improvise on the gender-integrated materials provided to them for teaching students. News items, quizzes, debates, case studies and even short films/film clippings were seamlessly integrated while teaching medical topics. This was a variation from the regular didactic teaching and students appeared to welcome such methodology. To cite an example, the additional lecture on 'sex, gender and health' was introduced to the students with the help of a story related to twins. The story wove real life experiences of girls and boys growing up, so that students could relate to it. While this was part of the methodology in the modules given to them, the educators added examples of how gender roles are perpetuated by media through a series of advertisements where women were shown as nurses and men as doctors, wives as home makers and husbands as breadwinners, girls playing with dolls and boys playing with guns.

One educator showed this advertisement to explain gender norms:

The advertisement shows a little girl very excited about her baby brother coming home. She decorates the nursery for him, the crib has all types of dolls. The parents come in with the baby, and her father immediately says, 'Bhai doll ke sath nahi khelega' (Brother will not play with dolls). The girl is crestfallen. In the next scene, the father is teaching the girl to play cricket so that she can play with her brother. The educator further elaborated that the dolls were replaced with Spiderman who is a superhero, because the brother will not be playing with dolls. So right from birth, it is taught to children that feminine things are not for boys. In this advertisement, a gender stereotype is broken when the father teaches daughter to play cricket, but it is so that she can play with her brother and not for the sake of the girl.

While discussing the concept of gender identity, students were familiarized with the concept of inter sex and transpersons. Educators provided examples based on social media messaging, as students are adept in using them. One educator referred to how solidarity with the LGBTQI community was being shown on social media platforms; the depiction of a rainbow was discussed at length. But the role of doctors goes beyond supporting this and must translate into being aware and sensitive to the unique health concerns of such a marginalised community and demonstrate a non-discriminatory attitude while treating them.

The content of the additional lecture based on 'sex, gender and health' was new to the medical students. Possibly, it was the first time that they were introduced to the concepts of 'gender role', 'gender identities', 'patriarchy' etc. The educators made an effort not to limit the lecture to theoretical concepts by making it more interactive by using different ways such as asking questions, telling a story, among others. The educators also constantly made an effort to make the lecture relevant for medical practice by giving clinical examples; for instance, it is said that prevalence of blindness is more among females; the reasons for which are more social than biological, like poor nutrition among women leading to deficiencies, delay in treatment seeking etc. With the help of such examples, the educators explained how gender comes into play in the case of diseases. The second additional lecture on gender based violence was also conducted in a detailed manner at all the sites. The relevance of gender based violence was elaborated on both as a public health problem and from the treatment point of view. The case studies were used to explain all points related to handling a case of violence. The educators added recent statistics for most of the lectures like prevalence of violence and unsafe abortions, for stressing the gravity of the issues. The educators also made references to Millenium/Sustainable Development Goals MDGs/SDGs stressing the point that 'gender equality' is one of the goals, and a crucial one as all other goals are difficult to achieve without achieving gender equality. The gender content on MTP and PCPNDT, along with the technical aspects of the laws was made more relatable to the students by providing contemporary examples many of which were positive, for instance, by citing rape cases where courts had extended the time limit of MTP and gone out of the way to provide it the survivor. Different reasons why women approach abortion services at a late stage of pregnancy were explained with the help of a case study.

The educators with their implementation of GME lectures successfully exhibited that the gender content can be incorporated into the regular MBBS curriculum.

Documentation of select lectures showed that medical educators were successful in integrating the gender content in medical lectures in the given time. They also demonstrated ease while using interactive and participatory methods for carrying out activities, though it was not their regular practice. All the educators used the suggested participatory methodology for the sessions. Three of them innovated and added their own methods as described above.

It was also recognised that just as gender has to be integrated in theory for development of a gender sensitive perspective, it has to be integrated into clinical practices so that

educators can enable students to implement gender sensitive response to patients. Clinical checklists were made to enable students to develop a lens to review current practices and recognise changes that need to be brought about to make patient-provider interaction gender sensitive. When educators themselves demonstrate gender sensitive practices in clinical settings, they can serve as role models for students. This was demonstrated by one of the trained educators in the department of OBGYN. As a first, he started using mannequins instead of patients for teaching students. In addition, he adopted aspects of respectful maternity care by developing communication skills amongst labour room staff. He also introduced gender sensitive protocol for medico legal care to sexual violence, burns and domestic violence survivors. He attributes the changes he brought about to his participation in the GME program. This is a success story of GME.

One of the most significant changes that he was able to bring about was the change in the name of the department. From 'Department of Family Welfare, Obstetrics and Gynecology Department' to 'Gynecology and Obstetrics Department- ANC, Comprehensive Abortion Disha Centre"

The change depicts the change in perspective; It is not about family planning but about women's reproductive health, placing abortion care upfront also sends an important message.



Family Welfare Department
obstetrics and Gynaecology
Department

Gynaecology and Obstetrics
Department-ANC, Comprehensive
Abortion Care-Disha Centre

8 Discussion and Conclusion

The findings indicate a positive shift in the knowledge and attitudes of medical students who were exposed to gender integrated medical lectures during the six semesters. A positive gender attitude is seen in both male and female medical students in the intervention category. However, female respondents seem to have distinctly positive attitudes when compared to their male counterparts. These findings are in tune with other studies that show more positive attitudes amongst female medical students than among male because gender affects women disproportionately compared to men and gender stereotypes are more favourable to men than to women (Verdonk et al. 2008).

Specifically, the shift is observed for themes dealing with the issue of access to safe abortions, understanding reproductive health concerns and its complex interplay with gender roles, violence against women as a health issue, and sexuality and health. However, the scores for the post-test of medical students in the control group have remained consistently the same, and are lower in the theme related to gender and its relation with reproductive health issues. It is important to note that Semester 8 students had started with clinics; they may have inadvertently imbibed the practices of senior medical practitioners in the Outpatient Departments (OPDs) and wards who were not exposed to GME. Similar observations have been echoed in a study measuring the empathy levels among medical students. The results show an inverse relationship between the number of years of education and empathy, that is, increased number of years of medical education show decreased levels of empathy amongst them. A range of reasons attributed to the lowered empathy range from high patient load in public health facilities and lack of space to lack of privacy, overworked doctors and lack of effective role models in senior doctors (Shashikumar, 2014).

While two additional lectures on 'gender', 'sex' and health and violence against women as a health issue were introduced, the project ensured that gender integration was not restricted to these two stand alone lectures. An important factor that contributed to the positive attitudes towards 'gender' and recognition of gender as an important factor in health care was the seamless integration of gender concerns in regular medical topics. To cite a few examples, adolescent health concerns were added to topics of menstruation and

sexual health problems for gynaecology disciplines, the same concerns were addressed in community medicine through the lens of health services delivery and how gender affects adolescent girls and boys differently.

Change in pedagogical practices contributed in no small measure to the shift in attitude towards a gender sensitive approach to medical education. A crucial contribution of gender-integrated modules has been the introduction of a participatory approach to teaching concepts. The use of case studies, films, debates, discussions and role play enabled an environment for medical students to voice their opinions freely; thus, the effort made by medical educators to strike a dialogue and engage medical students on the issue of gender informed health care is an important factor (Hedegaard et al. 2014). An observation was that the attendance amongst medical students in the intervention category consistently increased, which also led to more positive gender attitudes as seen in the results mentioned in the previous chapter.

It is interesting to note that some medical educators expanded the scope of integration beyond classroom teaching and introduced gender sensitive changes in clinical practice. For example, the GMC Aurangabad gynaecology department brought in simple but effective changes in clinical practices. Immediate steps taken by them were adding curtains to individual beds in the labour room, developing a protocol for responding to pregnant burns victims, and introducing a protocol for medico legal care of sexual violence survivors. A routine practice for medical students is to observe patient care, but such observations and discussions can be invasive for patients. Recognising the ethical challenges in this practice, introducing a mechanism of informing the patient in advance about the discussion and respecting her privacy by covering the patient while the discussions went on, were some of the steps taken to ensure the dignity of patients. The department introduced a proforma to document the histories of burns in pregnant women recognising that most pregnant women with burns may be survivors of domestic violence. They also engaged with the burns/surgery department to develop a comprehensive protocol for all burns related patients. This resonates with the experience at the Chulalongkorn University, Thailand. Trained medical faculty introduced the idea of integrating gender in the medical curricula to medical educators from preclinical and clinical medicine, nurses, social workers and public health practitioners. A follow-up study three months after the workshop (with a 71% response rate) showed that 81 percent of the participants reported having an improved understanding of the concept of gender, 50-60 percent of participants were applying these concepts to teaching and service delivery, and 63 percent had implemented

new practices or projects integrating gender issues. Between 15 and 25 percent said that they applied their understanding of gender to their personal lives.

The initiatives of integrating gender in medical education started in 2002 when the World Health Organization (WHO) adopted the gender policy committing itself to gender equality and equity in health and to redressing health inequities that are a consequence of gender roles and unequal gender relations in society (WHO 2002). Although there have been initiatives to integrate gender in medical education the world over, they are mostly restricted to introductory and stand-alone lectures on gender. These are taught during internship or clinical rotations and not in specific classroom teachings. Very few initiatives like that in Philippines have included specific issues such as women's health and intimate partner violence in the academic curriculum. Similar observations can be made about China and Turkey, wherein women's health and intimate partner violence have been integrated in topics such as sexual and reproductive health and sexuality (Turkey and China). However, there is dearth of documentation related to the experience of integrating gender in medical education; only two such documented initiatives exist, one is Monash University in Australia and Chulalongkorn University in Thailand. Another well documented initiative has been 'Gender and Health Collaborative Curriculum' Project in Canada which has developed web-based modules as resources for medical educators who wish to integrate gender into their teaching and could also be used by interested students. (WHO 2002). In this context, the experiences from the state of Maharashtra is the most recent and pertinent.

The uniqueness of the current study is that the gender content has been developed across all five disciplines of undergraduate medicine and has been included in relevant medical lectures. Such a holistic development of different modules is an important contribution to the medical curriculum. The gender in medical education initiative went beyond introducing a few lectures on gender perspective to integrating an understanding about gender in each of the lectures. This ensured that the gender lens was applied for each topic and it was not left to the students to link the 'gender' lecture to the current topic.

To conclude, this study illustrates that gender can be integrated into medical teaching by training the medical faculty and providing them with adapted modules. One of the contributions of the study has also been the development of a scale to measure the knowledge and attitudes of medical students to gender concerns contextualised to the Indian setting. This tool can be implemented in other settings to carry out similar studies.

Integration of Gender in Medical Education (GME) - the first such initiative in India was taken in Maharashtra. The study results are encouraging, as it has indicated the feasibility of integration within the time and resource constraints of medical colleges. There is now a clear need to sustain such integration in the medical colleges already involved in GME and also to expand this initiative and disseminate learning in the medical colleges in different states of India. The National Health Policy commits to gender mainstreaming in health programmes and medical education. Gender sensitisation is critical for ensuring good quality of care. There is a need to earmark funds towards different activities on mainstreaming gender into the medical curriculum, such as equipping medical educators with the perspective and skills, testing competencies of medical educators and medical students to deliver gender sensitive health services and generating research evidence on the association of gender with health outcomes of women and other marginalised communities.

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Annexure 1

Statements with percentage change, adjusted DiD and p value

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Intervention	Control	Intervention		
Q1	It is alright for women to tolerate violence to keep the family together.	Disagreement	91 %	92 %	92 %	94 %	1 %	0.733
Q2	Women are better at changing diapers, giving children a bath and feeding children	Disagreement	29 %	29 %	34 %	44 %	10 %	0.059
Q3	A man should take the final decision in his home.	Disagreement	74 %	71 %	71 %	77 %	9 %	0.070
Q4	It is a woman's responsibility to avoid getting pregnant.	Disagreement	78 %	74 %	82 %	81 %	4 %	0.438
Q5	If I have a gay friend then I will be seen as gay too.	Disagreement	64 %	75 %	67 %	77 %	-1 %	0.877
Q6	Sexual desire is lower in women than in men.	Disagreement	44 %	47 %	49 %	59 %	7 %	0.248
Q7	To be a man, you need to be rough and tough.	Disagreement	65 %	62 %	59 %	64 %	9 %	0.130
Q8	There are times when a woman deserves to be beaten for certain mistakes.	Disagreement	81 %	86 %	81 %	87 %	0 %	0.948

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Interv- ent	Control	Interv- ent		
Q9	Men should be embarrassed if they are unable to get an erection during sex.	Disagreement	65 %	66 %	61 %	68 %	5 %	0.377
Q10	It disgusts me when I see a man acting like a woman.	Disagreement	29 %	34 %	30 %	41 %	6 %	0.288
Q11	A couple should decide together if they want to have children.	Agreement	98 %	97 %	94 %	96 %	3 %	0.200
Q12	If a woman gets pregnant, the child is mainly her responsibility.	Disagreement	90 %	92 %	90 %	94 %	3 %	0.332
Q13	Men are always ready to have sex.	Disagreement	40 %	44 %	32 %	45 %	8 %	0.163
Q14	A mother should bear the child that she has conceived.	Disagreement	47 %	42 %	45 %	61 %	22 %	0.000
Q15	Abortion is a good way of solving the problem of an unwanted pregnancy	Agreement	36 %	37 %	30 %	42 %	11 %	0.056
Q16	The decision to have an abortion should be the pregnant women's.	Agreement	61 %	63 %	57 %	73 %	14 %	0.010
Q17	A foetus is not a person until it can live outside its mother's body.	Agreement	17 %	22 %	20 %	30 %	5 %	0.362
Q18	Addressing differences between men and women creates inequality in health care.	Disagreement	42 %	41 %	39 %	38 %	0 %	0.958

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Intervention	Control	Intervention		
Q19	Doctors should only address biological differences between men and women.	Disagreement	25%	22%	31%	30%	3%	0.654
Q20	In treating diseases commonly seen in both men and women, the sex and gender of the patient is irrelevant.	Disagreement	59%	45%	50%	48%	12%	0.047
Q21	A doctor should confine as much as possible to medical aspects of health complaints of men and women.	Disagreement	18%	9%	22%	23%	10%	0.033
Q22	Doctors do not need to know what happens in the lives of men and women to be able to deliver medical care	Disagreement	79%	73%	64%	75%	18%	0.001
Q23	Whether the doctor is male or female is too small a difference to be relevant	Disagreement	19%	20%	25%	26%	0%	0.931
Q24	Although men and women are different from each other, it is important that doctors treat everybody the same.	Disagreement	8%	7%	11%	12%	2%	0.554
Q25	Doctors who address gender differences are not dealing with the important issues.	Disagreement	34%	35%	38%	41%	2%	0.733

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Intervention	Control	Intervention		
Q26	In communicating with patients, it does not matter to a doctor whether the patients are men or women.	Disagreement	42 %	35 %	42 %	40 %	4 %	0.465
Q27	Differences between male and female patients are so small that doctors can hardly take them into account.	Disagreement	55 %	59 %	59 %	61 %	-1 %	0.873
Q28	In communicating with patients it does not matter whether the doctor is a man or a woman.	Disagreement	29 %	27 %	32 %	36 %	6 %	0.256
Q29	Male patients better understand the approach of doctors than female patients.	Disagreement	68 %	74 %	61 %	68 %	1 %	0.918
Q30	Female patients compared to male patients have unreasonable expectations of doctors.	Disagreement	47 %	56 %	35 %	46 %	2 %	0.697
Q31	Women more frequently than men want to discuss problems with doctors that do not belong in the OPD.	Disagreement	24 %	30 %	20 %	28 %	2 %	0.641
Q32	Women expect too much emotional support from doctors.	Disagreement	21 %	27 %	17 %	29 %	6 %	0.274

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Intervention	Control	Intervention		
Q33	Male patients are less demanding than female patients.	Disagreement	42%	46%	36%	42%	3%	0.657
Q34	Women are larger consumers of health care than is actually needed.	Disagreement	58%	54%	56%	58%	6%	0.313
Q35	Men do not go to a doctor for minor health problems.	Disagreement	19%	23%	20%	24%	0%	0.929
Q36	Medically unexplained symptoms develop in women because they complain too much about their health	Disagreement	36%	43%	34%	45%	4%	0.458
Q37	Female patients complain about their health more often because they need more attention.	Disagreement	49%	54%	42%	55%	5%	0.150
Q38	It is easier to find causes of health complaints in men because men communicate in a direct way.	Disagreement	23%	25%	20%	25%	3%	0.500
Q39	Men seek treatment more often for problems they should have prevented.	Disagreement	19%	20%	22%	25%	2%	0.694
Q40	No abortion services should be provided to women who already have daughters.	Disagreement	67%	68%	61%	79%	17%	0.001

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Intervention	Control	Intervention		
Q41	Women consult doctors for their health concerns just as easily as men do.	Disagreement	60%	42%	44%	54%	22%	0.000
Q42	Consent of woman is not required for carrying out family planning procedures as long as her husband agrees.	Disagreement	97%	92%	83%	91%	14%	0.000
Q43	In a public hospital a patient cannot expect privacy.	Disagreement	70%	67%	62%	68%	8%	0.143
Q44	If a female patient complains of domestic violence, the husband should be informed immediately	Disagreement	23%	37%	28%	50%	9%	0.115
Q45	Secrecy around menstrual practices cannot lead to reproductive tract infections.	Disagreement	60%	57%	51%	67%	20%	0.001
Q46	Hysterectomy is a reliable solution for all menstrual abnormalities	Disagreement	78%	70%	79%	81%	11%	0.031
Q47	Ante natal care should only look at the status of a woman's pregnancy and her foetus.	Disagreement	65%	54%	59%	60%	11%	0.053
Q48	Hysterectomy does not affect women's health in any way.	Disagreement	81%	77%	79%	81%	5%	0.257

			Pre Test		Post Test		Adjusted DiD estimate	
Que. No	Statement	Response Category	Control	Interv- ention	Control	Interv- ention		
Q49	Only strict monitoring and controlling technologies will stop sex determination and preconception sex selection	Disagreement	36%	25%	33%	28%	6%	0.274
Q50	Lack of toilets in schools leads to absenteeism among young girls	Agreement	77%	74%	73%	83%	12%	0.015
Q51	Law against sex determination is adequate to address declining sex ratio.	Agreement	22%	33%	26%	27%	-10%	0.054

Annexure 2

THEMATIC ANALYSIS OF STATEMENTS

Themes	Questions included	Pre Test		Post Test		P value
		Control	Interv- ention	Control	Interv- ention	
Attitude towards Gender roles of men and women	Q14, Q2, Q3, Q7	2.971	3.000	3.006	3.231	0.027**
Gender sensitivity in addressing health concerns	Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q43	2.712	2.640	2.783	2.758	0.431
Assessing gender stereotypical attitudes towards patients	Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q41	2.689	2.795	2.637	2.744	0.993
Attitudes towards women and girls seeking abortion services	Q15, Q16, Q17, Q40, Q49, Q51	2.806	2.860	2.811	3.009	0.012**
Attitude towards delivering reproductive health services to women and men	Q4, Q11, Q12, Q42, Q45, Q46, Q47, Q48, Q50	3.945	3.873	3.865	3.972	0.001***
Gender attitudes towards sexuality	Q10, Q13, Q5, Q6, Q9	3.155	3.280	3.178	3.387	0.231
Attitude towards gender based violence	Q1, Q44, Q8	3.873	3.929	3.874	4.087	0.040**





Centre for Enquiry Into Health And Allied Themes

CEHAT is the research centre of Anusandhan Trust, conducting research, action, service and advocacy on a variety of public health issues. Socially relevant and rigorous academic health research and action at CEHAT is for the well-being of the disadvantaged masses, for strengthening people's health movements and for realizing the right to health care. CEHAT's objectives are to undertake socially relevant research and advocacy projects on various socio-political aspects of health; establish direct services and programmes to demonstrate how health services can be made accessible equitably and ethically; disseminate information through databases and relevant publications, supported by a well-stocked and specialised library and a documentation centre.

CEHAT's projects are based on its ideological commitments and priorities, and are focused on four broad themes, (1) Health Services and Financing (2) Health Legislation, and Patients' Rights, (3) Women and Health, (4) Violence and Health

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